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Technical Report 784

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# The Army Communications Objectives Measurement System (ACOMS): Annual Report, School Year 86/87

Veronica F. Nieva and Gregory H. Gaertner  
Westat, Inc.

Timothy W. Elig and Michael E. Benedict  
U.S. Army Research Institute

Editors

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U.S. Army Research Institute  
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April 1988

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**The Army Communications Objectives  
Measurement System (ACOMS):  
Annual Report, School Year 86/87**

**Veronica F. Nieva and Gregory H. Gaertner**  
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*April 1988*

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) <p>&gt;This paper presents results on (a) trends in key indicators of Army advertising effectiveness; (b) the distinctive images of the Army, its components and other services; (c) preliminary assessments of the Army's market segmentation strategy; (d) the viewing habits of 16- to 24-year-old American youth; (e) exposure to Army advertising; (f) recall of Army advertising; (g) knowledge of Army offers and benefits; and (h) career-choice and enlistment behaviors of the youth market.</p> <p>Interviews reported in this paper were conducted from October 1986 through June 1987. Samples were drawn monthly by random digit dialing (RDD) procedures. The sample were weighted to the eligible U.S. population on a quarterly basis. Household screenings to identify eligible respondents were completed in 83.4% of sampled households. Interviews were then completed in 76.3% of eligible youth identified in the completed screenings. The combined response rate was 63.3%, yielding a total of 6,774 youth interviews.</p> <p style="text-align: right;">(Continued)</p>					
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Market segmentation	Youth attitudes
Media habits	ACOMS

## 19. Abstract (Continued)

The Army Communications Objectives Measurement System (ACOMS) survey is a multiyear telephone survey of a nationally representative sample of 16- to 24-year-old American youth and their parents. The survey tracks changes in perceptions, attitudes, and behaviors relevant to Army advertising. Data are being collected continuously through the year, using computer-assisted telephone interviewing (CATI) technology. ~~Random digit dialing, involving a modified Waksburg method, is being used to identify eligible respondents.~~ *Advertising, Youth attitudes* The 30-minute interview asks youth about their responses to Army advertising, media habits, career plans, and various demographic characteristics. Parents of selected 16- to 20-year-old respondents, who meet certain eligibility requirements, are also being interviewed on parallel topics.

Other ACOMS-related reports are identified as follows:

Technical Reports 785, 786, and 787  
Research Report 1473  
Research Products 88-04, 88-05, 88-06, 88-07, and 88-08  
Research Notes 88-17 and 88-18

## FOREWORD

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To effectively recruit manpower, the U.S. Army uses advertisements to affect the knowledge, attitudes, and behavioral intentions of youth and such significant influencers as parents. Army advertising development and execution is guided by a positioning statement and by specific, measurable objectives. This report documents findings from the first year of the main survey being conducted to measure the achievement of those objectives under the Army Communications Objectives Measurement System (ACOMS), which supports Army assessments of advertising program strategies and effectiveness and also supports both planning for future strategy and increasing the operational efficiency of Army advertising programs.

ACOMS has been developed to meet the needs of Army policy makers and operational managers through a cooperative effort with a Special Advisory Group (SAG) of representatives from the staffs of the Office of the Deputy Chief of Staff for Personnel, the U.S. Army Recruiting Command, the U.S. Army Reserve Officers' Training Corps Cadet Command, and the Office of the Chief of the Army Reserve.

The participation of the U.S. Army Research Institute (ARI) in this cooperative effort is part of an ongoing research program designed to enhance the quality of Army personnel. This work is an essential part of the mission of ARI's Manpower and Personnel Policy Research Group (MPPRG) to conduct research to improve the Army's capability to effectively and efficiently recruit its personnel. Specific efforts on ACOMS were undertaken at the direction of the Deputy Chief of Staff for Personnel. Results reported in this first annual report were briefed to the SAG on 2 September 1987 and 23 November 1987. Highlights were also briefed to the Deputy Chief of Staff for Personnel on 21 September 1987.



EDGAR M. JOHNSON  
Technical Director

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## PREFACE

---

This paper reports the results of the first year of survey data collected for Project Image Watch-Dog, "Army Communications Objectives Measurement System (ACOMS)." The project addresses the Army personnel accessioning system that is responsible each year for obtaining from the non-prior-service youth market over 200,000 volunteers for the enlisted and warrant officer force. The U.S. Army Reserve Officers' Training Corps (ROTC) Cadet Command is responsible for attracting over 37,000 high-quality youth into ROTC programs as college freshmen at 4-year colleges. In order to effectively recruit in the youth market, various components of the U.S. Army use advertisements to produce changes in the knowledge, attitudes, and behavioral intentions of youth and such significant influencers as peers and parents. ACOMS provides a measurement and analysis system to support Army assessments of advertising program effectiveness, assessments of advertising strategy efficiencies, management of the advertising program, and planning and development of new marketing strategies and segmentations.

The planning for this research was initiated in 1984. ACOMS developed out of work performed for a series of advertising effectiveness conferences directed by the U.S. Army Recruiting Command (USAREC) at the request of the Deputy Chief of Staff for Personnel (DCSPER), who met with the Commander of USAREC, the Chief of the Army Reserve, the Director of the Army National Guard, and the Deputy Chief of Staff of Training and Doctrine Command for ROTC in November of 1984 to review the results of these conferences. These officers approved the mission requirements for ACOMS prepared by their staffs as well as the basic research plan prepared by the U.S. Army Research Institute (ARI). The DCSPER directed ARI to develop and monitor research plans and necessary contract efforts for ACOMS with guidance from a Special Advisory Group (SAG) from the involved Army offices. The Defense Manpower Data Center was added in a special technical advisory capacity before the first meeting of the SAG.

The SAG was intimately involved in refining the mission requirements for ACOMS throughout the procurement process that led to the selection by ARI in 1985 of Westat, Inc., as the ACOMS contractor. Scientists from Westat and the Army community, together with many advisors, developed and refined The Army Communications Objectives Measurement System (ACOMS): Survey Design (ARI Technical Report 785) and The Army Communications Objectives Measurement System (ACOMS): Survey Analysis Plan (ARI Technical Report 786). In addition to guidance from the SAG, plans for ACOMS benefited from advice on sampling, weighting, and estimation from a Statistical Advisory Panel. The report describes the efforts of many people on the Westat Project Team and in the Army community.

The ACOMS system involves more than just surveys or other methods of data collection. The analysis and reporting agenda for ACOMS has been set by Army users to ensure that, in addition to their own in-house analyses, research products would regularly flow to users and systematically address their needs. Research products include quarterly reports, annual tabulation volumes, and interim reports on interpretive analyses summarized in an annual report. The present annual report is on analyses of the first three quarters of data collected from youth respondents.

The basic plan is to annually report on interviews conducted during the school year (July through June), a schedule that supports the Army's advertising planning cycle. This report is on an incomplete year of data (October 1986 through June 1987) since the ACOMS main interview data collection did not begin until October. Because ACOMS is complex and is intended to be a multi-year system of continuing data collection and analysis, great care was taken during the design and planning stages.

Each chapter of this report describes the efforts of many people on the Westat Project Team and in the Army community. Papers and reports based on their efforts are provided in this document unless they are being separately published. Foremost among the separately published documents are the quarterly reports on results of the youth surveys (ARI Research Product 88-04), annual tabulations of youth survey results for enlisted (ARI Research Product 88-05) and officer markets (ARI Research Product 88-06), and the results of a message content analysis of Army commercials that focused on active-duty, enlisted and warrant officer opportunities (ARI Research Report 1473).

TIMOTHY W. ELIG  
ARI Senior Scientist and  
Contracting Officer's Representative

THE ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): ANNUAL REPORT,  
SCHOOL YEAR 86/87

EXECUTIVE SUMMARY

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Requirement:

To improve the efficiency and effectiveness of Army advertising communications.

Procedures:

Interviews were conducted with 6,774 young persons, 16 to 24 years old, living in the contiguous 48 states; who had no prior military service or contractual commitment to serve; who were not institutionalized; and who were not graduates of 4-year colleges. Demographic information collected from respondents was used to group respondents for further analysis.

The 30-minute interviews were conducted by phone. Interviewers were assisted by computers that selected the order of questions and recorded the responses.

Interviews reported in this paper were conducted from October 1986 through June 1987. Samples were drawn monthly by random digit dialing (RDD) procedures. The samples were weighted to the eligible U.S. population on a quarterly basis. Household screenings to identify eligible respondents were completed in 83.4% of sampled households. Interviews were then completed with 76.3% of eligible youth identified in the completed screenings. The combined response rate was 63.6%.

Findings:

Results are summarized at the beginning of each chapter of the report. Major topics addressed in this report include the following:

- Preliminary Assessments of Trends among the Primary Male Analytic Sample (chapter 3)
- Brand Differentiation among Army Components and Military Services (chapter 4)
- An Initial Exploration of the Dual-Market Theory (chapter 5)
- Media Habits (chapter 6)
- Exposure to Programs Featuring Army Advertising (chapter 7)
- Recall of Army Advertising (chapter 8)
- Knowledge of Army Officers (chapter 9)
- Behaviors Relating to Career Choice (chapter 10)

#### Utilization of Findings:

The report provides information useful to Army policy makers and organizations with operational responsibility to more effectively recruit in the youth market. ACOMS is being used for Army assessments of advertising program effectiveness, assessments of advertising strategy efficiencies, management of the advertising program, and planning and development of new marketing strategies and segmentations.

Based on analyses from the first three quarters of ACOMS, the ROTC Cadet Command has changed the attributes to be emphasized in future marketing efforts for Army officers. In addition, the relative emphasis placed on Army attributes is being changed in advertising efforts for the enlisted force.

THE ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): ANNUAL REPORT,  
SCHOOL YEAR 86/87

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THE ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM  
(ACOMS): ANNUAL REPORT, SCHOOL YEAR 86/87

Gregory H. Gaertner and Veronica F. Nieva

Introduction

This report presents analyses of data collected from interviews conducted for the Army Communications Objectives Measurement System (ACOMS) in the School Year 86/87. These analyses are based on telephone interviews with 4,096 youth in the Army's primary male enlisted market.

The chapters in this report represent the first integrated summary of findings from the ACOMS surveys of American youth. They build on existing reports of ACOMS findings which include the ACOMS Quarterly Reports (Gaertner, Nieva, Elig, & Benedict, 1988) and a series of working papers issued by the Army Research Institute's (ARI) Manpower and Personnel Planning and Research Group (MPPRG). The current report should be understood as the partial culmination of a design and data collection process that began with the ACOMS Survey Design (Nieva & Elig, 1988) and the ACOMS Survey Analysis Plan (Gaertner & Elig, 1988).

At the same time, the current report only begins the analysis of this rich and complex data system. The purpose of this report is to provide comprehensive descriptions of levels and trends in key indicators of Army advertising strategy and effectiveness and to begin the construction of an integrated model of the role of the Army's advertising in the enlistment decision. The current analyses exhaust neither the data resources nor the interview measures available to ACOMS. Future research directions are discussed at the conclusion of this chapter.

We begin this chapter by providing a rationale for the topics covered in the report and describe the contents and order of the analyses. We then provide a brief overview of the findings of the chapters and discuss implications for future research directions under ACOMS.

Rationale and Organization of This Report

The purposes of ACOMS are to support Army:

- (1) Assessments of advertising program effectiveness;
- (2) Assessments of advertising strategy efficiencies;
- (3) Management of the advertising program; and
- (4) Planning and development of new marketing strategies and segmentations.

These purposes require three different kinds of research studies: (a) Tracking studies to determine levels and trends in key indicators of advertising effectiveness of interest to the Army, (b) Marketing studies to assess the image of the Army in its key enlisted recruiting markets, and (c) Assessments of Advertising Effectiveness which identify key indicators of advertising effects and show the relationships among them and between them and the Army's advertising effort. Additional studies might involve assessing the fit between Army advertisements and the Army's communications objectives, the exposure of youth populations to Army advertising and the changes in youth attitudes and behaviors which would result. This model of Fit-Exposure-Change is discussed in the ACOMS Survey Analysis Plan (ARI Technical Report, 1988), and involves integrating data from a variety of sources. The current report relies primarily on the data collected in the ACOMS youth interviews.

While the tracking effort of ACOMS analysis is mainly focused on the ACOMS Quarterly Reports (MPPRG citation), Chapter 3 (Nieva & Gay, 1988) in this report summarizes important results from the Quarterly Reports for School Year 1986/ 1987. Other chapters as appropriate also include data on trends in key indicators across the school year.

Market analysis under ACOMS involves describing and analyzing the perceptions of the Army and its offers held by youth prospects and identifying the distinctive appeals and image of the Army compared with other services. This is the purpose of Chapters 4 (Wilson, Davis, & Greenlees, 1988) and 5 (Nieva & Allen, 1988), although perceptions of the Army figure in nearly all of the chapters in this report. Chapter 4 presents results on brand differentiation among services and components in terms of youth perceptions of their respective offers and begins to develop comprehensive portraits of the distinctive images of the various services and Army components. Chapter 5 presents analyses of the Army's existing segmentation strategies especially focusing on demographic, attitudinal and behavioral differences between high school students oriented toward college and those oriented toward civilian employment.

Assessments of the effectiveness of Army advertising are provided by the remaining chapters in this report. Instrument construction, data collection, and analysis under ACOMS have been guided by Fishbein and Ajzen's (1975) hierarchy of effects model. This model (Figure 1) posits that, based on sociodemographic characteristics and media habits, prospects are exposed to advertising messages, some of which are recalled, depending on novelty, importance to the prospect and frequency of exposure. Recall affects knowledge of the offer and perceptions of the offerer. Knowledge of the offer and attitudes toward the product are hypothesized to affect behavioral intentions to buy. Fishbein and Ajzen have extended the model to include social influences on the buying decision by incorporating the attitudes of relevant influential others.

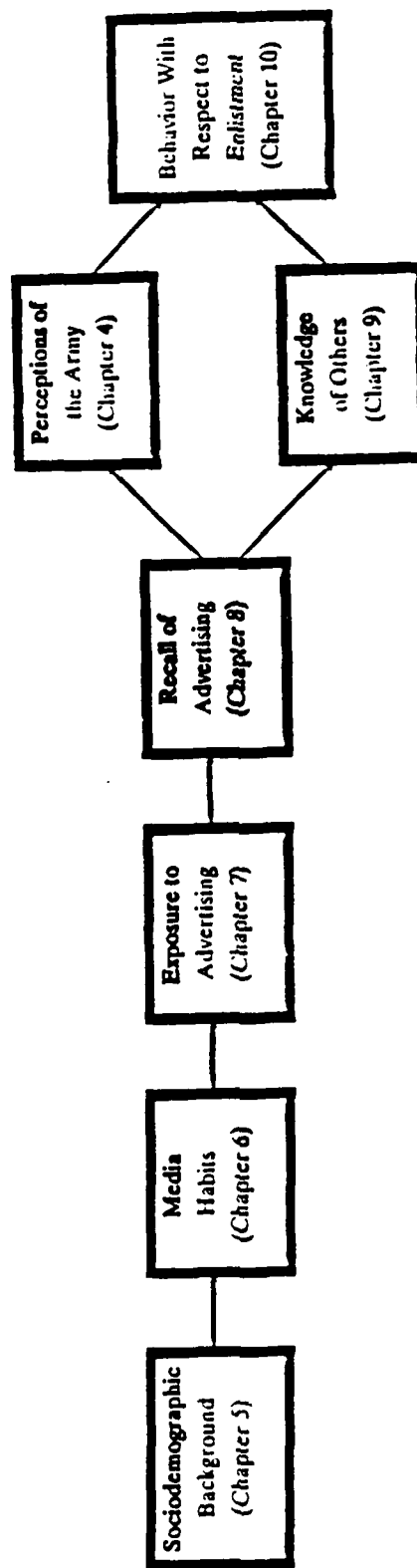


Figure 1. Expanded hierarchy of effects model.



Key concepts in the model therefore include:

- (1) Sociodemographic background
- (2) Media Habits
- (3) Exposure to Advertising
- (4) Recall of Advertising
- (5) Perceptions of Attributes and Importance of Attributes to the Prospect
- (6) Knowledge of the Offer
- (7) Intentions and Behaviors

These concepts organize the ACOMS Computer Assisted Telephone Interview (CATI) protocol discussed in Chapter 2 (Nieva, Wilson, & Allen, 1988) of this report. They also organize the content and order of the chapters in this report. Figure 1 includes the chapters in which the relevant concepts are discussed and analyzed.

Chapter 6 (Keil, Greenlees, & Gaertner, 1988) provides descriptions of the media habits of youth in the primary male enlisted markets. Chapter 7 (Greenlees & Gaertner, 1988) presents analyses of the exposure of youth to programs featuring Army advertising. Chapter 8 (Gaertner & Greenlees, Recall of Army Advertising, 1988) presents analyses of the recall of Army advertising and the effects of recall on perceptions of the Army. Chapter 9 (Keil & Gaertner, 1988) presents analyses of the knowledge of Army benefits and offers held by youth and the relationships between knowledge and recall of advertising, perceptions of the Army and intentions to enlist. Chapter 10 (Gaertner & Greenlees, Behaviors Relating to Career Choice, 1988) presents analyses of the enlistment-related behaviors undertaken by youth and how these relate to advertising recall, perceptions of the Army and intentions to enlist.

#### The Organization of Each Chapter

In spite of the division of analytical labor among the chapters, they share several common organizing principles.

First, all of the chapters draw from a common sample of American youth, the Primary Male Analytic Sample (PMAS). This sample is constructed to mirror the Army's primary market for enlisted and warrant officer personnel. It consists of males in the 48 contiguous United States between the ages of 16 and 24 who have not served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college ROTC course; and who have not yet completed their sophomore year in college.

Second, results are presented in terms of a common set of market segments. These include:

- (1) Education: College freshmen and sophomores, college-oriented high school students, work-oriented high school students and high school graduates not currently enrolled.
- (2) Recruiting Brigade (Rctg Bde): 1st Recruiting Brigade (NE), 2nd Recruiting Brigade (SE), 4th Recruiting Brigade (MW), 5th Recruiting Brigade (SW), 6th Recruiting Brigade (W) (See Figure 2).
- (3) Age: 16-17, 18-19, 20-21, 22-24.
- (4) Race: White, Black and other.
- (5) Hispanic Ethnicity: Hispanic and non-Hispanic.

Chapter 2 gives details on the construction of these market segments.

Third, the Army is not a unitary product, but rather consists of unique components with unique offers and attributes. Thus, chapters in the report include separate discussions for the Army Reserve Officers Training Corps (ROTC), the Army Reserve (USAR) and the Army National Guard (ARNG). Parallel measures of most of the concepts in the hierarchy of effects model are available for each Army component. Thus, for example, we analyze the effects of recall of ROTC, USAR and ARNG advertising as well as the effects of recall of active Army advertising.

There is cumulation of findings across chapters. Chapters 9 and 10 in the volume draw on and make use of results and scales presented in earlier chapters. Further, scale construction and variable definition are consistent across the various chapters.

The chapters begin with an overview, describing the Army's requirements for the analysis, the procedures employed, a summary of the results and suggestions for utilization. The narrative sections of the chapters begin with a statement of purpose and the role of the chapter in the overall assessment effort. A discussion of methods follows, which describes the overall sample, measures to be utilized in the chapter, and restrictions on the overall sample dictated by the measures and the subject matter. While some of the sample description is therefore redundant, we include complete descriptions of the sample in each chapter so that the chapters can stand alone as separate analytical efforts. Preliminary versions of several of the chapters have previously been released as Manpower and Personnel Policy Research Group (MPPRG) Working Papers. In all cases, however, current chapters supersede previous versions and provide additional analysis and insight. The results sections of Chapters 6 through 10 are further divided into subsections dealing with scale construction and data reduction, levels of key indicators overall and by market segment, and relationships between key indicators and other variables of interest.

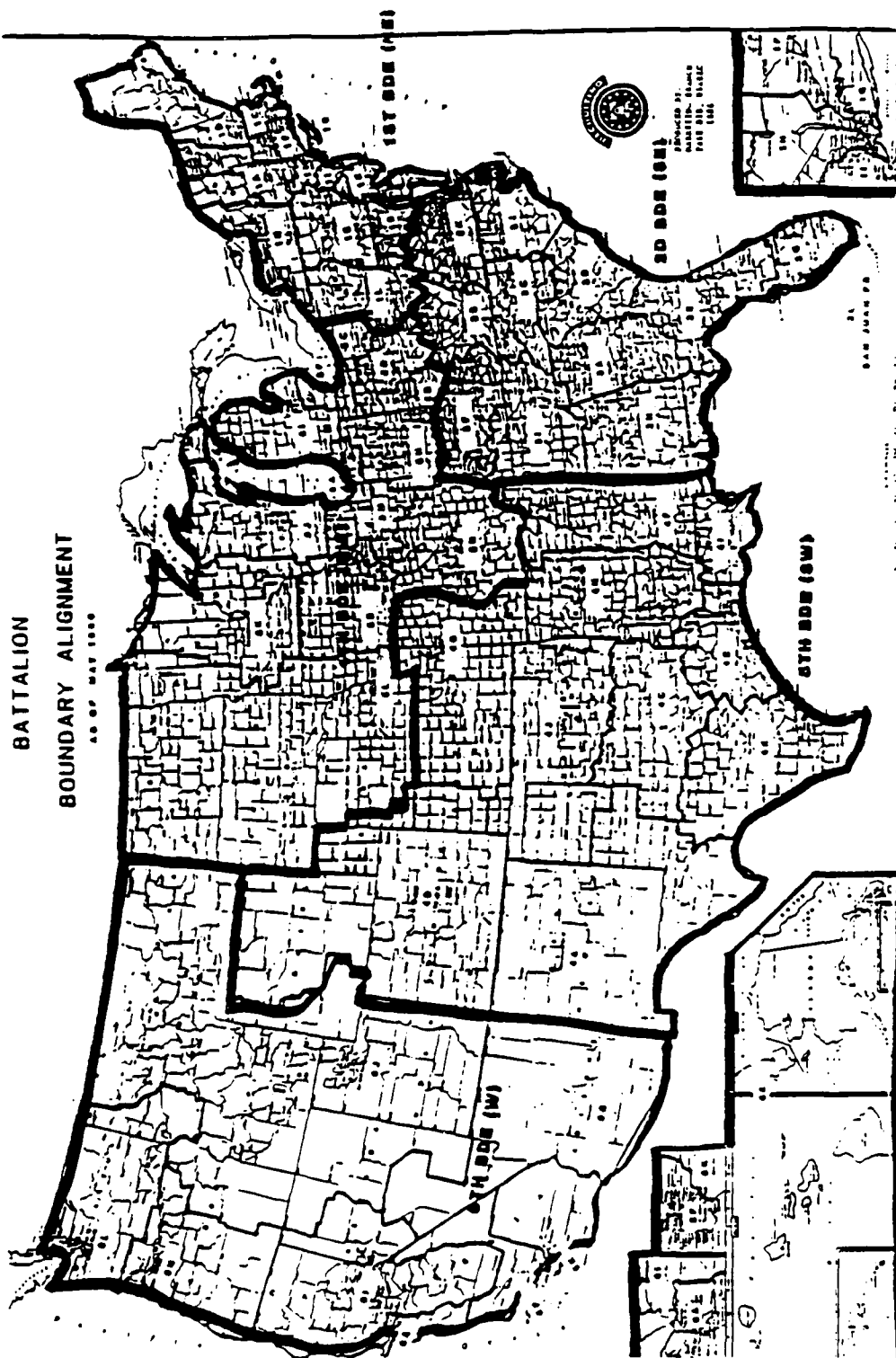


Figure 2. Map of U.S. Army Recruiting Command (USAREC) recruiting brigades.

### Overview of Findings

The results reported in the various chapters and in other ACOMS analyses suggest moderate strength relationships between advertising, perceptions of the Army, and eventual enlistment activity. The results suggest relationships between exposure to advertising and recall of advertising themes, between recall of advertising and knowledge of offers on one hand and perceptions of the Army on the other, and finally, between knowledge of offers and perceptions of the Army on one hand and intentions to enlist and enlistment-related activity on the other. These relationships provide preliminary evidence of the effectiveness of Army advertising. In fact, the results generally confirm positive associations between service-specific advertising and positive images of the respective services.

The analyses also address U.S. Army Recruiting Command's (USAREC) dual-market theory of different appeals for college-bound and work-bound high school students. It is clear that there are important differences between the work-oriented and the college-oriented. Work-oriented high school students are much more likely to feel that the Army offers things of value to them than college-oriented high school students and are more likely to intend to enlist in the Army. At the same time, work- and college-oriented high school students do not greatly differ in what they value for themselves, suggesting that the dual-market theory is more easily applied to the realistic prospects of high school youth than to their aspirations for future opportunities. The large gaps between what is important to the college-oriented and what they see the Army as offering are troubling not only because these youth are likely to be the high quality prospects the Army hopes to recruit, but also because they are so numerous in the youth population.

The results suggest that the Army's image, while favorable, is basically unidimensional. Other services' images frequently contain multiple aspects (e.g., high tech equipment linked with skill training, development of potential linked with self-confidence). By contrast, the Army's image basically resolves to favorability or unfavorability toward the offers of the service. The implication is that the Army may find it difficult to secure market niches supported by appeals which are favored by distinctive groups. In the absence of these, favorability to offers and perhaps enlistment intentions can rise and fall comparatively widely in response to external events.

Summaries of the individual chapters are taken from the executive summaries which begin each of the chapters. They are condensed for ease of reference. Readers are directed to the specific chapters for details of the analyses.

### Chapter 3: Preliminary Assessments of Trends

For the primary male recruiting market as a whole, a general pattern of stability was obtained over the three quarters of school year 1986-87. Among the PMAS, enlistment intentions, perceptions of

the Army and its components, and recall of Army advertising remained at relatively constant levels across quarters.

There were a few important exceptions to the general pattern of stability. Significant declines were observed between the winter and spring measures of enlistment-related actions. A decline in the recall of ROTC and joint service advertising from fall to winter was also observed. An increase in intention to enlist in the Army Reserve was observed from fall to winter.

#### Chapter 4: Brand Differentiation

The Army has a broad and relatively undifferentiated image. This image is much like the generalized image that youth have of the military. The Army's image is also close to that of the Army Reserve. The Army is generally perceived positively over a wide range of attributes. The Army image distinguishes itself from military service by being more closely linked to mental challenge and job opportunities. The Army Reserve image is distinguished from the military service image and the Army image through closer identification with opportunities for training, mental challenge, and civilian career development attributes.

The National Guard, Navy, Marine and Air Force images are all composed of two aspects rather than a single, undifferentiated image. The two aspects seem to represent internal and external opportunities believed offered by these services and components. Internal images relate to opportunities for self-development, while external images relate to environmental opportunities provided by services and components.

The National Guard image distinguishes itself from other service images being identified as an opportunity for part-time work. More than other services, the Navy image seems to stress the opportunity to mature and grow personally. The Marine image is distinguished by a focus on mental and physical challenge.

The Air Force image is distinguished by the relative emphasis on civilian career development. While not as undifferentiated as the Army's, the Air Force elicits a wide range of positive perceptions more like the Army than any other dual-image service.

#### Chapter 5: An Initial Exploration of the Dual-Market Theory

College-oriented and work-oriented high school students are roughly equally distributed across brigades. An overall racial group comparison shows no significant difference by racial group. College-oriented students tend to be slightly younger than their work-oriented counterparts, and a greater proportion of college-oriented students have completed higher grade levels. College-oriented students aspire to higher levels of education.

College-oriented students achieve significantly higher grades in school than their work-oriented counterparts. Significantly higher

proportions of college-oriented students have taken or are planning to take high school mathematics courses (algebra, geometry, intermediate algebra, and trigonometry).

Work-oriented and college-oriented students are not significantly different in their rating of most Army attribute statements. Exceptions include money for college, stepping stone between high school and college, mental challenge, and leadership skills, which were significantly more important to college-oriented high school students.

In general, work-oriented high school students constitute a more favorable market for Army recruiters. Work-oriented high school students display higher aided and unaided intentions to enlist. The Army image is also more favorable among work-oriented than among college-oriented students. The Importance-Perceptions Gaps were also smaller among the work-oriented group than among the college-oriented group.

College and job orientation among high school students does distinguish between the two groups in terms of their educational experience and their plans. However, there is very little difference between these two groups in terms of their value structures.

Work-oriented high school students are more favorably inclined toward the Army in terms of their intentions to enlist, their view of the Army presenting more opportunities to obtain the desired attributes. Indications of declining favorability of the work-oriented group toward the Army suggests a need for more research on this group.

Results concerning the Importance-Perceptions Gap provide potential suggestions for the Army advertising program. For both groups, working with high-tech equipment seems to be an "oversold" attribute. Conversely, potentially "undersold" attributes include civilian career development and job variety. For the work-oriented group, the focus on money for education is largely irrelevant and could be greatly reduced.

#### Chapter 6: Media Habits

Patterns of overall media usage suggest that regular newspaper and radio (especially FM) usage are most frequent, though more hours are spent watching television than reading the newspaper. There is little association among the youths' regular television viewing, radio listening, and both magazine and newspaper reading.

Only one reliable summary indicator was identified: combined weekly hours spent watching network, cable and VCR television. The remaining variables cannot be combined to form reliable indicators of media usage. For example, AM radio appears to have its own audience distinct from the audience of FM radio.

Of seven programming categories investigated, youth were most likely to report that they are regular viewers of comedy, movies, and sports (80%-90%). They were less likely to watch music and mystery programs (55%-70%) and least likely to watch talk shows and dramatic presentations (40%-50%). Analyses indicate that programming categories cannot be combined to form summary indicators of television preferences.

Rock music is the most popular type of radio programming of the eight categories investigated. Youth indicate they regularly listen to rock radio (over 80%) as opposed to pop, news, and sports radio (50%-60%), easy listening and country western (30%-40%), and talk and classical (15%-20%). Analyses indicate that news, sports, and talk programs can be combined to form a reliable scale indicating that youth who listen to radio for news are also relatively likely to use radio to gain information about current issues and sports. Conversely, musical programs do not cluster reliably indicating that there is little predictable overlap in audiences among the various types of music programs.

Among regular readers of newspapers, 83% indicate that they regularly read the news section. News is followed in popularity by sports (78%), local (76%), comics (66%), and classified (62%) sections. Least frequently read are style (36%) and food (11%) sections. Newspaper section variables cannot be reliably combined to form summary indicators of newspaper section preferences.

Magazine readers most frequently mention regularly reading general editorial magazines such as Time and Newsweek (34%) and sports magazines (33%). Less often mentioned are auto magazines (18%) and magazines aimed at outdoor enthusiasts (9%), minorities (7%), and influencer populations (7%). Analyses indicate that types of magazines cannot be reliably combined to form summary indicators of magazine content preferences.

A reliable summary indicator of sports interest was identified by combining regular viewing of sports events on television, listening to sports broadcasts on radio, and reading about sports in the newspaper and magazines. College freshmen and sophomores, college-oriented high school students, and Blacks monitor a greater average number of media for sports than other educational or racial groups. Cross-media interest in news was assessed by combining regular listeners to news on the radio, readers of news sections of the newspaper, and news magazines. Although a reliable summary indicator of news interest was not identified for the sample as a whole, strong subgroup differences among educational, regional, age, and racial groups suggests that additional analyses are needed to determine whether a reliable summary indicator can be identified for some subgroups.

#### Chapter 7: Exposure to Programs Featuring Army Advertising

There is wide variety in rates of regular viewing of programs featuring Army advertising. Some programs and channels reach nearly half of the prime recruiting market, while others reach less than 10%.

Partly, these differences are a function of differences in viewing by medium. High rates of regular viewing were found for sports and sports-oriented programs or stations. The results suggest preferences for sports among some youth that extends across media. There are relatively weak or negative associations between radio and television program viewing.

Several distinctive age, regional, educational and ethnic patterns in monitoring particular programs and channels were discovered. Some radio programs deliver younger ages, some cable TV channels deliver Black youth viewers, and low viewing rates are in evidence in the West. For 7 of 10 commercial television and radio programs, college students and work-oriented high school students are at the opposite extremes in monitoring rates. For most of these shows, work-oriented high school students are relatively frequent viewers, college students less frequent. College-oriented high school students tend to have monitoring rates between college students and work-oriented high school students.

There are weak associations between viewing of particular programs and channels and recall of Army advertising. Further there are weak associations between viewing particular programs and channels and recall of Army advertising source. The frequency of airing of Army television advertising and subsequent recall of television as a source of Army advertising is sufficiently strong that no one show can independently account for respondent exposure. By contrast, the relatively lesser weight and lower source recall for radio makes it possible for individual shows to make a difference in source recall and in some cases in recall of Army advertising. However, the main effective medium given the Army's advertising strategy is still television.

These findings raise issues for exposure measurement in ACOMS. The weak associations between program viewing and recall of Army advertising suggest that there are no acceptable measures of exposure to Army advertising that can be drawn from the ACOMS youth interviews.

#### Chapter 8: Recall of Army Advertising

The Army's advertising has been effective in producing high levels of top-of-mind awareness compared with other services measured in terms of aided and unaided recall. However, recall of ROTC, Army Reserve and Army National Guard advertising is less. Levels of advertising recall are surprisingly consistent across educational, regional, age, and ethnic groups. Some differences exist suggesting lower recall among the work-oriented, youth in the 6th Rctg Bde region (Far West), and older youth.

Recall of active Army advertising is associated with favorable perceptions of the active Army, most strongly for messages which are prominent in active Army advertising, less strongly for messages less heavily emphasized (emphasis measured in terms of the message content analyses conducted under ACOMS). More generally, service-specific and component-specific advertising recall is associated with positive



perceptions of the service or component advertised, and especially for messages apparently receiving high emphasis.

There are strong differences in source recall. Television and magazine advertising are recalled more frequently and tend to be associated with unaided rather than aided recall. However, focused print advertising (e.g., direct mail, posters, pamphlets) seems better able than broadcast advertising to effectively target age and educational groups of interest.

Respondents who recall advertising for any active service are likely to recall advertising for all active services. Further, respondents who recall advertising for any of the ROTC, Reserve or Guard are likely to recall advertising for all of them.

#### Chapter 9: Knowledge of Army Offers

The results suggest that knowledge that the active Army and the Army Reserve and National Guard offer educational benefits and delayed enlistment is widespread in the youth market, but specific knowledge of the amount of educational benefits or length of service is less widespread.

While there are few differences in overall knowledge of the Army's offers by market segment, groups positioned to make use of an offer generally seem more knowledgeable about it. College students and college-oriented high school students are more likely than work-oriented high school students or nonenrolled high school graduates to know the maximum educational benefits offered by the Army even though they are not more likely to be generally knowledgeable about the Army's offers. Knowledge of active Army and Army Reserve and Guard benefits and offers does not seem to vary systematically over the year.

The development of summary indicators of knowledge about Army and component-specific offers took the path of index rather than scale construction, in part because of the comparatively low levels of intercorrelation among different knowledge items. These low intercorrelations suggest that knowledge of specific benefits and offers seems more likely to exist as isolated facts than as a highly coherent body of knowledge. There was, however, some tendency for knowledge of educational benefits to cluster together. The subsequent analyses relied both on specific items and on summary indices of knowledge of active Army and USAR and ARNG offers.

Youth recalling active Army advertising are more likely to be knowledgeable about Army offers than those who do not recall the advertising. Further, knowledge of the particular offers most closely associated with recall figures prominently in the copy points for many Army ads, and points less prominent in Army advertising are less related to recall. Knowledge of USAR and ARNG offers is not closely associated with recall of Army Reserve or National Guard advertising.

Perceptions of the active Army seem positively associated with knowledge of the Army's offers. In particular, youth knowledgeable about Army education benefits are more likely to have favorable perceptions of the Army than respondents unaware of these benefits. While knowledge of USAR offers is associated with favorable perceptions of the Army Reserve, the associations seem less strong. Further, knowledge-related items focusing on the image of new recruits in the Army are closely linked with perceptions of the active Army. Perceptions of the USAR and ARNG are less closely associated with images of new recruits, either because there was little connection seen between new recruits and the USAR/ARNG or because perceptions of these components is seen as less dependent on the quality of recruits.

Knowledge of active Army offers also seems linked to enlistment-related actions and intentions. Youth undertaking enlistment-related activities are more knowledgeable about active Army offers than those not active in enlistment-related behavior. However, to establish a causal connection between knowledge of offers and enlistment behaviors we need to control for overall youth career-planning activity and defeat the alternative hypothesis that youth gain knowledge as they undertake enlistment behaviors.

#### Chapter 10: Behaviors Relating to Career Choice

Career-choice behaviors measured in the ACOMS interviews cluster into three career paths: enlistment, college, and work. Each behavior path seems to be composed of a hierarchy of thought, discussion, and investigation/action. Job-seeking and enrollment behaviors seem to form a tightly linked progression of actions, with comparatively low loss rates from thought through action and to commitment. By contrast, enlistment-related behaviors seem more tenuously connected, with high loss rates at each progressive step.

College-enrollment behaviors are most frequently undertaken by college-oriented high school students, residents of the Northeast (1st Brigade) and West (6th Brigade), and 16- to 19-year olds, while work path behaviors are most frequently found among work-oriented high school students, residents of the Southeast (2nd Brigade) and Southwest (5th Brigade), Blacks, and older youth. Enlistment path behaviors are most frequent among both college and work-oriented high school students, residents of the Southeast (Bde 2) and Southwest (Bde 5), 16-19 year olds, and Blacks and Hispanics.

The analysis reported is limited to three quarters of data and cannot unequivocally distinguish between annual cycles and longer-term trends. However, the results suggest that college-related behaviors form an annual cycle building in the Fall toward college application deadlines in the Winter, and trailing off thereafter. Work behaviors seem to build throughout the year, evidence of either an annual cycle lagged a quarter behind the college application process, or a longer-term trend. Enlistment behaviors seem to represent an amalgam of two cycles. One cycle evidenced by work-oriented high school students and high school graduates not currently enrolled builds in the Fall, peaks in the Winter and trails off in the Spring, similar to college

enrollment behaviors. A second pattern, evidenced by segments of traditional recruiting strength (the 2nd and 5th Rctg Bdes based in the Southeast and Southwest, respectively, by 16-17 year olds, and by minorities) has enlistment-related behaviors declining throughout the year, evidence either of an annual cycle peaking in the Fall or a longer-term trend.

The results suggest that the role of advertising in enlistment activity is twofold. First, youth recalling advertising are more likely to undertake low-commitment actions (e.g., talking about enlistment). Second, youth recalling advertising have more favorable perceptions of the Army's offers and youth with favorable perceptions of the Army are more likely to undertake enlistment related behaviors. However, there is little effect of advertising on high-commitment behaviors such as visiting a recruiting station, taking the Armed Services Vocational Aptitude Battery (ASVAB).

#### Future Research Directions

The results show trends in key indicators of Army advertising effectiveness. However, for many of these trends (e.g., the decrease in enlistment-related activity among work-oriented high school students) we are not currently able to distinguish between seasonal variation and longer-term trend. Additional data collection and analysis may help to distinguish between seasonality and secular trend.

While the results confirm the utility of distinguishing between college- and work-oriented high school student markets, considerable refinement of this scheme is possible. First, it is unlikely that all of the youth who respond that they plan to attend college will actually do so. There may be important differences between the college-oriented and those who eventually enroll in terms of receptiveness to particular Army appeals. Second, the fact that work- and college-oriented high school students differ not so much in the things they find important as in opportunities they see as available suggests that college versus work orientation may be less a question of aspiration than a realistic appraisal of available opportunities. This would imply a segmentation strategy more based in circumstances and less in prospect needs and aspirations. These additional refinements could be pursued in subsequent research.

While the results suggest that the Army's image is basically unidimensional, current analyses do not suggest why this is so, and what, if anything, can or should be done about it. We have hypothesized that this unidimensional image is troubling because it may not encourage the cultivation of distinctive market niches and appeals, but there is little direct evidence favoring this hypothesis. Further analyses could confirm (or refute) concerns raised by a lack of complex or differentiated image.

The results are basically supportive of the hierarchy of effects model. They fall short of a complete confirmation for several reasons. First, as noted, difficult questions of causal direction

remain. It is difficult to say whether, for example, recall of advertising leads to favorable attitudes toward the Army or favorable attitudes cause youth to recall advertising or whether bright, aware youth or high propensity youth are more likely both to recall ads and be favorable toward the Army's offers. Similar questions remain for many of the analyses presented. In the absence of longitudinal data, these questions are not likely to be definitively resolved. Nonetheless time series and path analyses can be conducted to shed light on questions of causal direction and impact.

Further, the results suggest that few reasonable substitutes for the measurement of exposure to advertising can be drawn from the ACOMS interview data. In the absence of data measuring exposure to Army advertising, analyses linking the fit of the Army's communications objectives to the messages actually aired, and these to the perceptions of American youth may be difficult to establish.

In summary, the current report begins the process of analyzing the ACOMS interviews of American youth. While the initial directions are promising, much remains to be done, in collaboration with researchers at ARI, USAREC and other members of the recruiting community.

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## 2. SURVEY METHODOLOGY

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### Organization and Intention

The analyses presented in this report are drawn from a data base developed from an ongoing survey of a national probability sample of youth and their parents. In this chapter, the major features of the Army Communications Objectives Measurement Survey (ACOMS) are summarized in order to provide the reader a basic understanding of the methodological context of the data and analyses presented in the following chapters. The first part of the chapter describes the survey samples and important subgroups, the ACOMS survey instruments and the status of data collection for the School Year 1986-87 (SY 86/87). The second part of the chapter describes the complex character of the ACOMS sample design, and the tests of statistical significance that were required for the analyses of the complex survey data.

### The ACOMS Survey

The ACOMS survey is a data collection effort designed to monitor the Army's advertising program over time. Beginning in October 1986, a national probability sample of youth and their parents was interviewed using computer assisted telephone interviewing (CATI) technology. The respondents were questioned regarding a variety of issues related to advertising and the enlistment decision process, media habits, knowledge about various Army components and offers, perceptions of various Army attributes, and enlistment intentions and behaviors.

### The Youth Sample

The Waksberg random digit dialing (RDD) method is used to locate households with youth who fulfill ACOMS eligibility criteria on age, service in the Armed Forces and educational status. The youth sample for the ACOMS survey consists of 16- to 24-year-old males and females who have neither served nor enlisted in the Armed Forces and have not yet graduated from college.

The youth sample is broken into the following groups:

- (1) The Primary Male Sample (PMS). Male high school diploma graduates and those currently enrolled in a regular high school or college.
- (2) The Secondary Male Sample (SMS). Male high school non-completers not currently enrolled in a regular high school or college.
- (3) The Primary Female Sample (PFS). Female high school diploma graduates and those currently enrolled in a regular high school or college.

- (4) The Secondary Female Sample (SFS). High school non-completers not currently enrolled in a regular high school or college (SFS).

- (5) Supplementary Sample of Hispanics for the male sample.

Enrollment status for youths interviewed during the summer months (defined for this survey as July 1 through September 1) is defined by plans to be enrolled in school in September.

#### The Primary Male Analytic Sample (PMAS)

The PMS and PFS encompass many of the Army's prime recruiting groups, not only for the active Army but also for Reserve Officers' Training Corps (ROTC), Army National Guard (ARNG) and U.S. Army Reserve (USAR), and thus conform to the research objectives for ACOMS. However, this sample definition is slightly at variance with that used by the Youth Attitude Tracking Study (YATS). Consequently, for purposes of comparability, all analyses in this report are conducted on a subset of the PMS that parallels the YATS sample, labelled the Primary Male Analytic Sample (PMAS). The PMAS consists of PMS members who have not yet begun their junior year in college and who are not enrolled in a college ROTC program.

PMAS subgroups. In most of the chapters in this report, parts of the analyses involve the comparison of several subgroups within the PMAS that constitute market groups of interest to Army recruiting. These subgroups, which have been used in ACOMS Quarterly reports (Gaertner, Nieva, Elig, & Benedict, 1988), are defined in terms of educational attainment and plans, regions (i.e. Recruiting Brigades) and age segments.

The regional and age groupings are self-explanatory. Definitions of the groupings by educational attainment and plans are:

- (1) College Freshmen and Sophomores. This subgroup includes freshmen and sophomores currently enrolled in a four-year university or a two- or four-year college. Freshmen or sophomore status is determined by credit completed rather than by number of years in attendance.
- (2) High School Students (College-Oriented). Students currently enrolled in a regular high school program who answered either definitely or probably when asked how likely it is that they will attend college are included in this subgroup.
- (3) High School Students (Work-Oriented). Currently enrolled regular high school students who answered either definitely not or probably not when asked how likely it is that they will attend college, and those who refused to answer questions about future college plans are included in this subgroup.



- (4) High School Graduates, not Currently Enrolled. This subgroup is composed of high school diplomates who are not currently enrolled in a two- or four-year college or university. Also included are nondiplomates such as those who received a General Education Diploma (GED) but who have completed at least one but less than two full years of college and who are not currently enrolled.

#### The ROTC Subsample

The ROTC subsample consists of ACOMS youth who represent the officer recruiting market. The subsample contains two PMAS subgroups; college-oriented high school students, and college freshmen and sophomores. The ROTC subsample also contains college juniors and seniors. College students are included in the ROTC subsample only if they have never participated in college-level ROTC coursework.

#### ACOMS Questionnaire

The youth questionnaire provides the major measures of the dynamics and effects of Army advertising available in ACOMS. As presented in The ACOMS Survey Design (Nieva & Elig, 1988) and The ACOMS Survey Analysis Plan (Gaertner & Elig, 1988), the youth interview is designed with modules that provide various measures of a modified Hierarchy of Effects model (Fishbein and Azjen, 1975) of Army advertising effectiveness. In brief, the model suggests that advertising affects multiple criteria of advertising effectiveness (i.e., recall of Army advertisements, positive perceptions about the Army, positive attitudes towards Army enlistment, intentions to enlist, and actual enlistment-related behaviors) in a stepwise process. That is, advertising affects recall, which in turn affects attitudes toward the Army, which then influences actual behaviors related to enlistment. The model also posits the importance of social influence on the youth's attraction to the Army.

The youth interview is divided into 14 modules. In order to achieve a 30-minute average interview, a complex questionnaire structure was developed: eight questionnaire modules are "core" (i.e., asked of all respondents), and six are "rotating" (i.e., asked of a subset of respondents). Further, as described in a later section, the Perceptions module is divided into sections that are allocated to subsamples in conformance with the target markets of the various Army components. The core modules are:

- (1) Education and Employment which elicits employment history and measures of course content and school performance useful for assessing quality.
- (2) Intentions and Propensity which asks for the respondent's plans for the next few years, constructed to parallel and supplement measures of Army propensity in YATS.

- (3) Behaviors which elicit information on the respondent's activities relative to enlistment, employment and/or college enrollment.
- (4) Importance of Attributes which assesses the importance to the respondent of attributes defined by the Army's communications objectives. These items correspond to the evaluation component of the Hierarchy of Effects model.
- (5) Knowledge-Recall which asks for unaided and aided recall of Army (by component) and other service advertising, presented in random order. The respondent is also asked where the advertising was seen or heard, what its main message was, and whether he/she believed and/or liked it.
- (6) Attitude Toward Army Advertising which ascertains how much the youth likes and believes the advertisements he/she has seen or heard.
- (7) Perceptions/Beliefs which asks whether the Army (by component), other services, military service in general and/or college and civilian employment offer the attributes defined by the Army's communications objectives presented in random order. These items correspond to beliefs in the Hierarchy of Effects model.
- (8) Demographics which elicits information on respondent's ethnicity, marital status, social security number, socioeconomic background, and current residence location.

Although the Perceptions/Beliefs module is "core" (i.e., all youth respondents receive questions from this module) and is central to ACOMS' concerns, not all questions in the module are asked of all respondents. The Perceptions/Beliefs module contains questions regarding a list of attributes which correspond to the main copy points or communications objectives of Army advertising. Respondents are asked whether these attributes are descriptive of 10 referents (active Army, ROTC, ARNG, USAR, Navy, Marines, Air Force, military service generally, college, and work) that may be perceived by the youth as future options. Since asking any single individual to respond to the attribute list for all 10 referents would be an intolerable burden, sections of the Perceptions/Beliefs module were asked of different groups of respondents, defined in terms of educational attainment and career plans. The allocation plan reflects the market priorities of each of the Army components and was devised in collaboration with the SAC. The non-core modules are:

- (1) Media Habits which elicits information on the amounts of television, radio, and print material the respondent is regularly exposed to, and his/her favorite programs and print vehicles (asked only of a randomly selected half of all youth respondents).

- (2) Knowledge-Slogan Recognition which asks whether the respondent can identify slogans utilized in Army, other services, and joint-service advertising presented in random order (asked only of a randomly selected half of all youth respondents).
- (3) Knowledge-Awareness which asks for the respondent's level of knowledge concerning Army offers (asked only of a randomly selected half of all youth respondents).
- (4) Parental Location Information which elicits information required to contact parents (asked only of parental-linked target youth).
- (5) Social Influences which asks for the respondent's assessments of the attitudes of friends, parents, and others toward enlistment (asked only of parental-linked target youths).
- (6) Tracking Information which elicits information required to trace youth selected for inclusion in the longitudinal sample, including anticipated changes in telephone number, names and phone numbers of employer and two others likely to know respondent's whereabouts (asked only of longitudinal sample).

Thus, the noncore modules are only asked of particular groups of respondents. Tracking and Social Influence is only asked of youths whose parents will also be interviewed, since these respondents allow the fullest test of the social/normative aspects of the conceptual model. In addition, Slogan Recognition, Knowledge-Awareness, and Media Habits modules were asked of only a randomly selected half of all youth respondents, resulting in a substantial saving of time.

#### Data Collection Summary for School Year 1986-87

The analytic year corresponds to a school year starting in July 1 and ending June 30. For this first school year, only three quarters of the data are available because ACOMS data collection began in the fall quarter of 1986.

Table 1 summarizes data collection for SY 86/87. The table includes response rates for household screeners (i.e., short interviews conducted with households contacted randomly using the RDD methodology in order to locate youth eligible for interview) and youth interviews for School Year 86/87 ACOMS data collection. The response rate for household screeners is calculated as a percentage of completed screening calls to identified households in the sample of randomly selected telephone numbers. The response rate for youth interviews is calculated as a percentage of completed youth interviews among identified eligible youth in the sample. Interviewers have a total of eight weeks to close out each monthly sample of telephone numbers. This process includes identifying all nonworking and nonresidential numbers in addition to completing household screeners

on all identified households and completing interviews with all eligible respondents.

Table 1

School Year 1986/87 Data Collection Summary

	Fall 86	Winter 87	Spring 87	School Year 86/87 Total
Screening Interviews Completed	17,258	16,601	21,440	55,299
Household Screening Response Rate	84.2%	80.8%	84.1%	83.0%
Total Youth Interviews Completed	2,083	2,089	2,824	6,996
Youth Interview Response Rate	73.6%	76.6%	78.3%	76.1%
Primary Male Sample Interviews Completed	1,499	1,516	2,044	5,059
Primary Male Analytic Sample Interviews Completed	1,037	1,445	1,614	4,096
College Freshmen and Sophomores	207	268	296	771
HS - College	369	563	642	1574
HS - Work	102	133	184	419
HS - Not Enrolled	359	481	492	1332

ACOMS Complex Sample Design and Implications for Statistical Analyses

The ACOMS sample design does not produce a simple random sample. Rather, features such as the undersampling of females and the supplementation of Hispanic males produce a complex sample that has important analytic implications. (See Nieva & Elig, 1988.)

In order to produce accurate estimates of population proportions and other statistics, different weights must be used to adjust for the different rates at which subgroups have been sampled. The sample weights are used with ACOMS data to provide estimates of statistics (means, proportions, etc.) that would have been obtained if the entire population had been surveyed. The weights also include adjustments for various other factors in the ACOMS sample design, e.g. multiple telephone numbers in a household, nonresponse and clustering effects. Details of the ACOMS weights are provided in The ACOMS Survey Design.

Most standard techniques derived for statistical analysis assume that observations are independent and drawn using a simple random sample (SRS) design. From these assumptions, classical statistical theory has developed a wide variety of estimators valid under these conditions. For example, for an SRS drawn without replacement, the mean of a variable is computed using the familiar formula:

$$\frac{1}{n} \sum_{i=1}^n y_i = \bar{y} \quad \text{and variance is computed as}$$

$$\frac{1}{n-1} \sum_{i=1}^n (y_i - \bar{y})^2 = s^2.$$

Once a sample design departs from SRS, however, new computational procedures are required in order to take into account the effects of sample design upon the precision of statistical estimation. If, for example, a population is stratified into  $L$  mutually exclusive groups (e.g., males and females as in ACOMS) containing  $N_1$  and  $N_2$  individuals and random samples of predetermined sizes  $n_1$  and  $n_2$  are drawn from each strata, the standard (i.e., SRS) formulas for mean and variance become inappropriate and biased. The population mean in this stratified case is estimated by:

$$\bar{y} = \sum_{h=1}^L W_h \bar{y}_h$$

where  $y_h$  is the mean of the  $n_h$  individuals drawn from the  $h^{\text{th}}$  stratum,  $N$  is the total size of the population, and  $W_h = N_h/N$ . An unbiased estimate of  $y$ 's variance is:

$$V(\bar{y}) = \sum_{h=1}^L W_h^2 (1 - f_h) s_h^2 / n_h$$

where  $s_h^2$  is the variance of variable  $y$  in the  $h^{\text{th}}$  stratum, and  $f_h = n_h/N_h$  is the sampling fraction in the  $h^{\text{th}}$  stratum (McCarthy, 1966).

As this example illustrates, the complexity of formulas and computations required for statistical analysis increases as sample design departs from SRS assumptions. Two other implications of complex designs for statistical analyses are worthy of mention in connection with ACOMS. First, regarding more advanced statistical techniques, in many circumstances it is extremely difficult to even derive formulas for the computation of parameter estimates and variances. See Cochran (1963) for a discussion of difficulties encountered in the regression context. Second, certain techniques of sample selection are such that their effects on the precision of

survey estimates cannot be established a priori. (See Goodman & Kish, 1950, for a discussion of the technique of controlled selection.)

In sum, the complex ACOMS sample design which includes clustering, stratification, questionnaire module rotation, and differential question allocation within the perceptions module complicates analysis. Basically, complications are encountered in two areas. These are: (a) estimation of population parameters and (b) estimation of variances for population parameters (i.e., significance testing in the present context). The analysis solutions adopted in each case are discussed below.

#### Estimating Population Parameters

In the ACOMS sample, interviewed youth did not have equal probabilities of selection. Hispanic males, for example, were more likely than other males to be interviewed. If parameter estimation methods do not take into account differences in selection probability, biased results will be obtained such as estimating that 17% of American youth 16- to 24-years of age in the 48 contiguous United States are female and 83% are male.

To compensate for unequal selection probabilities (and other factors such as nonresponse, number of telephones in the household, etc.), weighting adjustments have been computed for each sampled individual. Weighting adjustments compensate for differential selection probabilities and other disparities among ACOMS respondents. In order to properly estimate population parameters, analyses reported in this document incorporate appropriate weighting adjustments in the estimation process.

This incorporation of weighting adjustments was easily accomplished in the Statistical Analysis System (SAS) software environment. Most SAS estimation procedures include options allowing a weight variable to be associated with an observation for computational purposes. Consequently, all analyses reported in this document are based upon weighted data unless otherwise indicated.

#### Variance Estimation and Significance Testing

For the analyses presented in this report, two variance estimation and significant testing strategies were utilized. In the case of contingency table analysis where chi-square tests were performed, an approximation adapted from Fellegi (1980) was used. In all other circumstances, the method of balanced repeated replications (BRR) was applied.

Where it was necessary to determine whether row and the column variables in a contingency table were distributed independently of each other, an approximate chi-square statistic is computed. The approximation essentially adjusts weighted estimates of table frequencies and proportions to reflect: (a) the unweighted sample size for the table and (b) design effects introduced by virtue of having a complex sample design. The design effect for a complex

sample is defined as the ratio  $V(\text{cmplx})/V(\text{SRS})$  where  $V(\text{cmplx})$  is a variance estimate taking the complex sample design into account and  $V(\text{SRS})$  is a variance estimate calculated assuming SRS. Most often  $V(\text{cmplx}) > V(\text{SRS})$  so that the design effect is greater than one. The approximation is presented in Fellegi (1980) as:

$$t'' = \frac{1}{b} \sum_{i,j} R \frac{(P_{ij} - P_{i.} P_{.j})}{P_{i.} P_{.j}}$$

where  $P_{ij}$  = the observed cell proportion,  
 $P_{i.} P_{.j}$  = the expected cell proportion,  
 $b$  = the average design effect for the table, and  
 $t''$  is distributed approximately as chi-square.

The effect of this approximation is to compute chi-square using weighted observed and expected proportions while simultaneously adjusting the computed chi-square statistic to reflect the effective (not weighted) sample size. The actual computation of design effects was accomplished by forming the ratio  $\sum W^2 / (\sum W)^2$  where  $W$  equals the weights used in computing weighted frequencies and proportions. Actual computation of this chi-square approximation required input of both weighted and unweighted table frequencies and was accomplished both within SAS and a personal computer (PC) spreadsheet environment as convenience dictated.

All other significance testing and variance estimation presented in this report used the BRR methodology. Essentially, BRR mimics empirically the sampling distribution theory which underlies variance estimation formulas used for SRS samples. In the SRS case, sample variance estimation formulas have been derived to estimate the variation that can be expected to occur in population parameter estimates where an infinite number of samples are drawn from the population.

The BRR methodology uses the full sample and repeatedly draws half-samples (i.e., samples one-half the size of the full sample - for ACOMS, 68 half-samples were drawn) from this sample. Variance about the sample parameter estimate (e.g., a mean, proportion, correlation coefficient, regression coefficient, etc.) is then computed as the variance of half-sample estimates about the full sample estimate. Computationally, parameter variance estimation is accomplished using the following formula:

$$V(e) = 1/68 \sum_{r=1}^{68} R (E_r - E_f)^2$$

where  $V(e)$  = the estimated variance of the parameter estimate,  
 $68$  = the number of half-sample replicates drawn for ACOMS,  
 $E_s$  = the parameter estimate for the  $r^{\text{th}}$  replicate sample, and  
 $E_f$  = the full sample estimate of the parameter.

This structuring of variance estimation and significance testing has the advantage of mimicking classical sampling distribution theory and therefore is conceptually straightforward. Additionally, by using half-samples drawn from the complex sample, design effects are explicitly incorporated within BRR variance estimation. Therefore, variance estimation and significance testing did not require the separate estimation of quantities such as design effect.

Using this BRR methodology, significance tests were performed in a variety of contexts. In Chapter 9 (Keil & Gaertner, 1988), for example, changes in mean knowledge of Army benefits values across quarters were tested for statistical significance using a standard analysis of variance test where variances were estimated by BRR. That is, Z-scores were computed using the formula  $(\bar{y}_1 - \bar{y}_2) / \sqrt{V(\bar{y}_1) + V(\bar{y}_2)}$  where the variances in the denominator were estimated using the BRR method. The BRR method was further generalized to perform tests of significance on correlation and regression coefficients as well as computing F tests in analyses of variance reported in this document.



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### 3. PRELIMINARY ASSESSMENTS OF TRENDS AMONG THE PRIMARY MALE ANALYTIC SAMPLE

Veronica F. Nieva and Nancy L. Gay

#### Overview

##### Requirement

To provide a preliminary examination of how youth responses related to enlistment and to Army advertising vary over time.

##### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS) between October 1986 and June 1987, youth respondents were asked a series of questions about their career-related plans and activities (including those related to the Army), the opportunities they regard as important for their future plans, their perceptions of and knowledge about the Army, their media habits, and recall of Army advertising.

The analyses reported in this chapter are based on the responses of 4096 16- to 24-year-old males in the Army's primary enlisted recruiting market. Data are presented for the Primary Male Analytic Sample (PMAS) by quarter. The analyses consist of quarterly comparisons of the youth responses, using Z-tests to assess statistical significance.

##### Results

For the primary male recruiting market as a whole, a general pattern of stability was obtained over the three quarters of school year 1986-87. Among the PMAS, enlistment intentions, perceptions of the Army and its components, and recall of Army advertising remained at relatively constant levels across quarters.

There were a few important exceptions to the general pattern of stability. Significant declines were observed between the winter and spring measures of enlistment-related actions. A decline in the recall of Reserve Officer's Training Corps (ROTC) and joint service advertising from fall to winter was also observed. An increase in intention to enlist in the Army Reserve was observed from fall to winter.

##### Utilization

This chapter provides information to Army policymakers and advertising planners regarding changes and stabilities in youth plans, values, perceptions of the Army, and responses to Army advertising. The utility of trend information will increase over time as more data points accumulate, making it possible to distinguish among seasonal patterns, long-term trends and reactions to advertising or other external events.

## Introduction

The Army Communications Objectives Measurement System (ACOMS) is a survey that continuously monitors the responses of American youth to Army advertising. One of its major purposes is to provide data over time regarding various advertising and enlistment-related issues, e.g., media habits, perceptions about the Army, and enlistment intentions and behaviors. Of interest is the detection of time-related response patterns that could reflect either seasonal patterns, reactions to specific advertising emphases or external events, or long-term trends that might affect the Army's recruiting and advertising programs.

This chapter provides an initial examination of the major indicators measured in ACOMS during the first three quarters of data collection in School Year 86/87 (SY86/87). Much of the specific data presented in this chapter have been presented separately in the ACOMS Quarterly Reports (Gaertner, Nieva, Elig, & Benedict, 1988). The intent of this chapter is to examine these data for any detectable regularities, with the understanding that any statements made with such a limited number of data points have to be preliminary, at best.

In general, the data presented in this chapter only provides a base line against which later data can be examined. At this point, it is clearly premature to state whether any changes observed through the year reflect seasonality, specific reactions or long-term trends. Nevertheless, the comparisons of quarterly data on ACOMS' major indicators provide a preliminary picture of the factors that tend to be stable and those that fluctuate over time.

## Methodology

The analyses presented consist of simple quarterly comparisons of the major ACOMS indicators on the Primary Male Analytic Sample (PMAS). Following the basic methodology used in the ACOMS Quarterly Reports (Keil et al., 1987), comparisons between quarterly percentages of the PMAS are tested for significance using Z-scores. For the most part, only single item measures are presented for this initial examination of trend data, although we expect to present summary scales and indices in the future.

The data presented in this chapter parallel those presented in the ACOMS Quarterly Reports. The questions included in the analyses are discussed briefly below.

### Unaided Intention

The unaided intention questions include this series of questions:

- (1) Now let's talk about your plans for the next few years.  
What do you think you might be doing?
- (2) (IF ANSWERS JOINING THE MILITARY OR SERVICE) You said you might be joining the military. Which branch of the service would that be?
- (3) (IF ANSWERS ARMY) Which type of service would that be?  
Would it be . . .

Active Duty  
the Reserve, or  
the National Guard?

### Aided Intention

The aided intention questions consist of the following series of questions:

- (1) How likely is it that you will be serving on active duty in the Army?
- (2) How likely is it that you will be serving in the Army Reserve?
- (3) How likely is it that you will be serving in the Army National Guard?
- (4) How likely is it that you will receive an officer's commission through participation in the Army Reserve Officers' Training Corps (or Army ROTC)?

Response categories range from definitely (scored 1), probably (scored 2), probably not (scored 3), and definitely not (scored 4). Respondents are considered to have general unaided intention to enlist in the Army if they volunteered that they might be joining any military service within the next few years and if they named the Army when asked which branch. Active Army, Army Reserve (USAR), and Army National Guard (ARNG) intentions are distinguished by asking respondents who had indicated general unaided intention to enlist in the Army what type of service they might join.

Aided intention to enlist in a particular component is considered positive if the respondent answered definitely or probably to that component. General aided intention is a measure composed of responses to the four individual component questions. Respondents who answered definitely or probably to one or more of the four questions were considered to have a general aided intention to enlist in the Army. The question wording and scoring for aided intention are similar to

parallel questions in the Youth Attitudes Tracking Survey (YATS) modified for Army use.

#### Enlistment-Related Behaviors

Enlistment-related behaviors are assessed using these questions:

- (1) In the past six months, have you talked with anyone about possibly joining the Army?
- (2) (IF ANSWERS YES) With whom have you talked?
- (3) (IF ANSWERS RECRUITER) Was the recruiter an Army recruiter?
- (4) In the past six months, have you talked to an Armed Forces recruiter about military service?
- (5) (IF ANSWERS YES) Was the recruiter you spoke with an Army recruiter?

In the past six months, have you...

- (6) responded to an Army ad by calling a toll-free number or sending for a gift?
- (7) visited an Army recruiting station?
- (8) taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery (ASVAB)?

#### Importance of Attributes

All youth are asked to rate the importance of 19 attributes with regard to his or her plans for the near future. These questions, which provide measures of youth values, are:

In thinking about your plans for the next year, please tell me how important it is that you have opportunities for the following things?

- (1) having a wide variety of opportunities to find a job you can enjoy?
- (2) having a physical challenge?
- (3) having an experience you can be proud of?
- (4) having a stepping-stone between high school and college?
- (5) developing leadership skills?
- (6) working with the latest high-tech equipment?

- (7) helping your career development?
- (8) developing self-confidence?
- (9) developing your potential?
- (10) having a mental challenge?
- (11) becoming more mature and responsible?
- (12) training in useful skill areas?
- (13) working with highly-trained people?
- (14) earning money for college or vocational education?
- (15) serving your country?
- (16) having interesting and exciting weekends?
- (17) working part-time?
- (18) living in your own hometown?
- (19) being able to make changes and use your own judgment?

The statements are presented in order with a random start to minimize systematic biases associated with response set. Response categories range from Not At All Important (scored 1) to Very Important (scored 5).

#### Perceptions of Army and Component Attributes

The ACOMS youth questionnaire asks the respondent to agree or disagree with statements describing attributes of the active Army, U.S. Army Reserve (USAR), Army National Guard (ARNG), and Reserve Officers' Training Corps (ROTC), other military services, and the military in general. The attribute statements are allocated to referents according to an algorithm described in The Army Communications Objectives Measurement System (ACOMS) Survey Analysis Plan (Gaertner & Elig, 1988). The statements used in the first quarter of data collection were later modified slightly. The statements used in the second following quarters were:

The (SERVICE) offers...

- (1) a wide variety of opportunities to find a job you can enjoy.  
(active and other services) (USAR) (ARNG) (ROTC)
- (2) a physically challenging environment. (active and other services)
- (3) an experience you can be proud of. (active and other services) (USAR) (ARNG) (ROTC)

- (4) an advantage over going right from high school to college.  
(active and other services)
- (5) an opportunity to develop leadership skills. (active and  
other services) (USAR) (ARNG)
- (6) the chance to work with the latest high-tech equipment.  
(active and other services)
- (7) a great value in your civilian career development. (active  
and other services) (USAR) (ARNG)
- (8) an opportunity to develop self-confidence. (active and  
other services) (USAR) (ARNG) (ROTC)
- (9) the opportunity to develop your potential. (active and  
other services) (USAR) (ARNG)
- (10) a mentally challenging experience. (active and other  
services) (USAR) (ARNG)
- (11) an opportunity to become more mature and responsible.  
(active and other services) (USAR) (ARNG)
- (12) many opportunities for training in useful skill areas.  
(active and other services) (USAR) (ARNG)
- (13) many chances to work with highly-trained people. (active  
and other services) (USAR) (ARNG)
- (14) an excellent opportunity to obtain money for college or  
vocational school. (active and other services) (USAR)  
(ARNG)
- (15) an opportunity to serve America while living in your own  
hometown. (USAR) (ARNG)
- (16) interesting and exciting weekends. (USAR) (ARNG)
- (17) an excellent opportunity for part-time work. (USAR) (ARNG)
- (18) leadership and management training. (ROTC)
- (19) a college elective that can be taken together with other  
college courses. (ROTC)
- (20) an officer's commission in the active Army, Army Reserve, or  
the Army National Guard. (ROTC)
- (21) the opportunity to use your college-acquired skills. (ROTC)
- (22) the opportunity to make changes and use your own judgment.  
(ROTC)

Each of these statements is presented after the relevant question on the importance of attributes. For example, if the respondent receives active Army and Reserve statements, the interviewer says, "The Army offers you a physically challenging environment," then follows with, "How about the Reserve?" During the first quarter of data collection, respondents were asked the full set of attributes for one component/service/other before continuing to the next component/service/other.

Response categories range from 1 to 5 where 1 means Strongly Disagree, 2 means Disagree, 3 is Neither Agree nor Disagree, 4 is Agree and 5 is Strongly Agree. Each respondent is asked about two or at most three components/services/other.

#### Recall

The following four questions are used in assessing unaided recall of advertising by the Army, other military services and the military in general:

- (1) Thinking about all forms of advertising, for which military service or services do you recall seeing or hearing any advertising?
- (2) (IF ANSWERS ROTC) You mentioned seeing or hearing advertising for the Reserve Officers' Training Corps. For which military service or services was this advertising?
- (3) (IF ANSWERS ARNG) You mentioned seeing or hearing advertising for the National Guard. For which military service or services was this advertising?
- (4) (IF ANSWERS USAR) You mentioned seeing or hearing advertising for the Reserve. For which military service or services was this advertising?

#### Knowledge of Offers

Knowledge about Army benefits is considered to be one of the positive effects of advertising. Questions about Army benefits and offers are grouped into those that pertain to the active Army and those that pertain to the USAR and ARNG, and the correct answers are displayed in parentheses.

- (1) Active Army Benefits and Offers:

Is it possible to earn money for college by enlisting in the Army? (Yes)

(IF ANSWERS YES TO FIRST QUESTION) How much do you think can be earned through Army education benefits? (\$15,000+)



(IF ANSWERS YES TO FIRST QUESTION) Do you think Army education benefits are more, less or about the same as the Navy, Air Force or Marines offer? (More)

Please tell me whether or not the Army offers the "GI Bill"? (Yes)

What is the minimum number of years that a new recruit has to serve on active duty in the Army? (two years)

Is it possible to sign up for the Army and start serving up to one year later? (Yes)

(2) Army Reserve and Army National Guard Benefits and Offers:

Are 17-year-old high school juniors eligible to join the Army Reserve or Army National Guard? (Yes)

(IF ANSWERS NO) Is high school graduation required before joining the Army Reserve or Army National Guard? (No)

Who sponsors the "Scholar-Athlete Award Program?" Is it the Marine Corps, National Guard, Army Reserve or Army National Guard? (Army Reserve)

Can qualified people who join the Army Reserve or Army National Guard receive money for college? (Yes)

(IF ANSWERS YES) What is the maximum amount of money for college that qualified people who join the Army Reserve or Army National Guard can receive under the "GI Bill"? (\$4,000-\$5,999)

Media Habits

Youth respondents are asked about the various types of television shows he or she frequently watches and about the various types of radio programs he or she frequently listens to. The questions for television and radio habits are:

(1) Do you frequently watch any of the following types of TV shows?

Sports  
Suspense or mystery  
General drama  
Music or music video  
Situation comedy  
TV movies  
Talk shows

- (2) Do you frequently listen to any of the following types of radio programs?

News  
Classical music  
Pop  
Country  
Sports  
Talk shows  
Rock & roll  
"Easy listening"

### Results and Discussion

#### Enlistment Intentions and Actions

All youth interviewed for ACOMS are asked about their plans for the next few years. From their responses, two types of indicators of enlistment intentions are derived. If respondents spontaneously mention plans for joining the Army (or if they originally respond in terms of the military, but specify the Army in response to a probe), they are considered to have "unaided intentions to enlist in the Army." Further probes clarify the Army component meant by respondents. If respondents do not mention the Army spontaneously when answering questions regarding plans for the future, they are specifically asked about the likelihood that they will be serving in each Army component. "Aided intention to enlist in an Army component" is considered positive if youth state that they will definitely or probably enlist in that component. A further derivative indicator is computed across the "aided intention" measures. Respondents are considered to have a "general intention" to enlist in the Army if they respond definitely or probably to any one of the component questions. The scoring for the various intentions indicators parallel scoring used in YATS. The "unaided intentions" indicators provide the most conservative measures of Army enlistment intentions, while the "general intentions" provide the most inclusive measures of enlistment intentions.

Tables 2 and 3 show the quarterly percentages of PMAS youth who are considered as having unaided and aided intentions to enlist in the Army. In general, the enlistment indicators are very stable across quarters for the PMAS as a whole. It should be noted that the ACOMS Quarterly Reports (Keil, Gay, et al., 1987; Keil, Gaertner, et al., 1987) and other chapters in this report show that significant differences do appear for specific market groups that are not reflected in the data for the PMAS as a whole.

For the school year 1986-87 (SY86/87), 2.1% of the PMAS have unaided general intentions to enlist, and the percentages do not vary significantly by quarter. For SY86/87, 1.2% of the PMAS report unaided intentions to enlist in the active Army; and the percentages of PMAS reporting unaided intentions to enlist for the USAR and the ARNG are .5% and .4%, respectively. A significant increase was

Table 2

Percentage of Primary Male Analytic Sample with Unaided Intention to Enlist in Army Components

	<u>F86</u> (n=1037)	<u>W87</u> (n=1445)	<u>Sp87</u> (n=1614)	<u>SY86/87</u> (n=4096)	<u>Z-scores</u>		
					<u>F86-</u> <u>W87</u>	<u>W87-</u> <u>Sp87</u>	<u>F86-</u> <u>Sp87</u>
General Intention	1.5	2.5	2.1	2.1	--	--	--
Active Army	0.9	1.2	1.4	1.2	--	--	--
Army Reserve	0.2	0.9	0.4	0.5	-3.13	--	--
Army National Guard	0.4	0.4	0.4	0.4	--	--	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

Reserve Officers' Training Corps is not a relevant response to the unaided intentions question and thus is not included in this table.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 3

Percentage of Primary Male Analytic Sample with Aided Intention to Enlist in Army Components

	<u>F86</u> ( <u>n=1037</u> )	<u>W87</u> ( <u>n=1445</u> )	<u>Sp87</u> ( <u>n=1614</u> )	<u>SY86/87</u> ( <u>n=4096</u> )	<u>Z-scores</u>		
					<u>F86-</u> <u>W87</u>	<u>W87-</u> <u>Sp87</u>	<u>F86-</u> <u>Sp87</u>
General Intention	23.4	26.2	24.7	24.8	--	--	--
Active Army	13.5	13.6	13.7	13.7	--	--	--
Army Reserve	11.8	16.0	13.7	14.0	2.37	--	--
Army National Guard	10.4	12.6	12.3	11.9	--	--	--
Reserve Officer's Training Corps <sup>a</sup>	15.4	16.3	16.6	16.4	--	--	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

<sup>a</sup>ROTC percentages include only PMAS youth who said they would definitely or probably attend college. Sample sizes are as follows: F86, n=750; W87, n=1079; Sp87, n=1158; SY86/87, n=2987.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

observed in unaided intentions to enlist in the USAR from F86 to W87 (.2 to .9,  $z=-3.13$ ,  $p<.05$ ).

As noted in the ACOMS Quarterly Reports, the aided enlistment indicators are generally much higher than the unaided indicators. In SY86/87, 24.8% of the PMAS have aided general intentions to enlist in the Army, with no significant quarterly differences. Stable percentages were also found for aided intentions to enlist in the active Army, the USAR, and the ROTC (SY86/76 estimates of 13.7%, 11.9% and 16.4%, respectively). Only for the USAR was there found a significant quarterly difference. Aided intention to enlist in the USAR increased significantly from F86 to W87 (11.8% to 16%). The SY86/87 average for aided intentions to enlist in the USAR was 14%. Figure 3 shows the quarterly percentages of PMAS reporting aided intentions for each Army component.

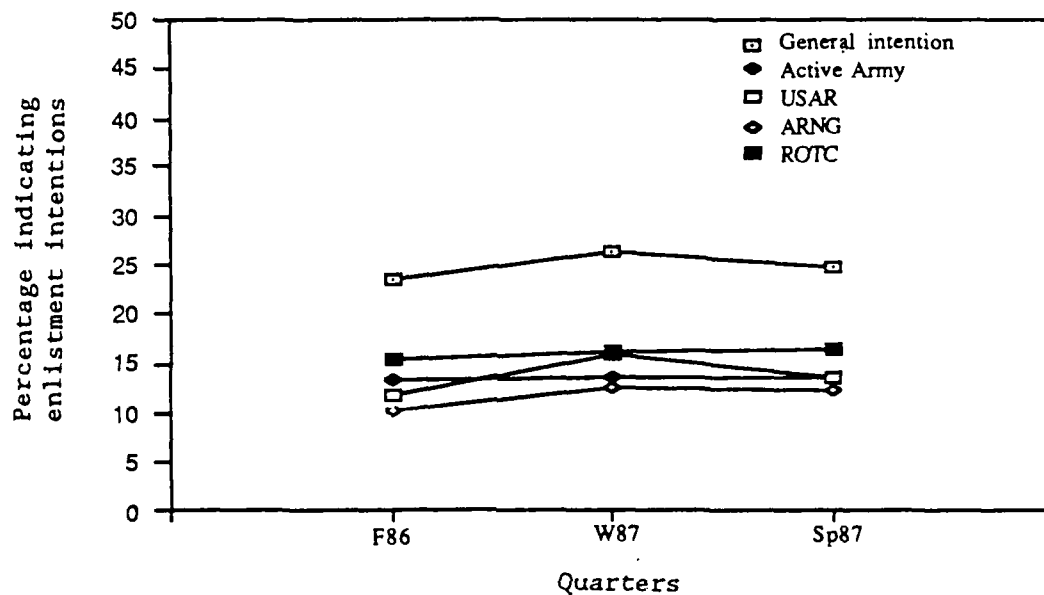
#### Enlistment-Related Actions

Youth are asked whether they have engaged in various enlistment-related actions in the past six months. Included are actions that are general and reflect less commitment to enlistment (e.g., talking to anyone about possibly joining the Army) and actions that are more seriously related to enlistment (e.g., visiting an Army recruiting station).

Table 4 shows the quarterly and school year percentages for the enlistment-related actions. As has been reported in the ACOMS Quarterly Reports (Keil, Gay, et al., 1987; Keil, Gaertner, et al., 1987), the largest percentages are obtained for the most general action, i.e., talking to anyone of joining the Army (24.4% for SY86/87), and the estimates are relatively stable across quarters. Talking to an Army recruiter also appears to be stable over the school year, with 13.1% of the PMAS reporting this behavior for SY86/87.

The pattern of results changes, however, among the three actions that reflect more serious interest in Army enlistment. For these actions, significant declines were observed from W87 to Sp87. For SY86/87, 10.4% of the PMAS report having taken the Armed Services Vocational Aptitude Battery (ASVAB); this percentage decreased significantly from W87 to Sp87 (12.3% and 6.7%,  $z=5.18$ ,  $p<.05$ ) and from F86 to Sp87 (12% and 6.7%,  $z=4.23$ ,  $p<.05$ ). Similar declines from W87 to Sp87 were observed among the PMAS for visiting an Army recruiting station (7.9% to 5.4%,  $z=2.71$ ,  $p<.05$ ) and responding to an Army ad (6.0% to 4.1%;  $z=2.21$ ,  $p<.05$ ). Figure 4 shows the quarterly data on enlistment-related actions among the PMAS.

The declining pattern in behaviors that are directly related to Army enlistment is particularly interesting given the stable patterns observed for both enlistment intentions and enlistment behaviors that are more general. Data accumulated over a longer period will enable us to determine whether there are predictable lag or lead relationships in the long-term between enlistment intentions and behaviors, and what these indicators signal for actual enlistment contracts.



Note. ROTC percentages include only PMAS youth who said they would definitely or probably attend college.

Figure 3. Percentage of Primary Male Analytic Sample youth with aided intention to enlist in Army components.

Table 4

## Percentage of Primary Male Analytic Sample Taking Enlistment-Related Actions

Action	F86 (n=1037)	W87 (n=1445)	Sp87 (n=1614)	SY86/87 (n=4096)	Z-scores		
					F86- W87	W87- Sp87	F86- Sp87
Talked to anyone of joining Army	26.3	23.6	23.3	24.4	--	--	--
Talked to an Army Recruiter	14.2	12.7	12.4	13.1	--	--	--
Taken ASVAB	12.0	12.3	6.7	10.4	--	5.18	4.23
Visited Army Rctg. Station	6.0	7.9	5.4	6.5	--	2.71	--
Toll-free call/ sent for gift	4.5	6.0	4.1	4.9	--	2.21	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

ASVAB is the Armed Services Vocational Aptitude Battery.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

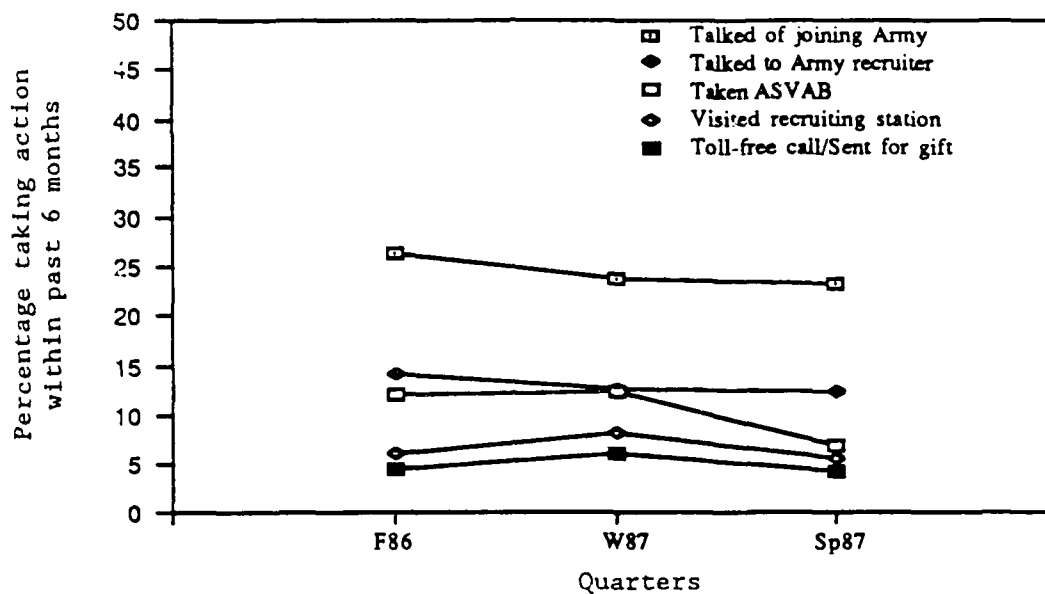


Figure 4. Percentage of Primary Male Analytic Sample youth taking enlistment-related actions.



### The Strength of the Army Image

The "Army image" is defined in terms of agreement with statements that the Army, the Reserve, the National Guard, and the ROTC offer a set of attributes emphasized in Army advertising. Army image strength indicators are derived by computing an average of the percentages of PMAS who "agree" or "strongly agree" with each attribute statement describing each Army component. In general, a higher percentage is interpreted as meaning a "stronger image," that is, relatively greater acceptance by the primary youth market of the copy points stressed by the Army in its advertising. It should be remembered that each Army component has its own set of attributes, derived from the component's communications objectives. As described in the earlier section on measures included in this analysis, the Army has 14 attribute statements; the USAR and the ARNG have a set of 14 attributes statements that includes most of the active Army attributes. The ROTC has a unique set of 8 attribute statements, and its own separate sample definition. See Chapter 2 (Nieva, Wilson, & Allen, 1988) for a description of the ROTC sample. The data presented here are for the ROTC Male Sample only.

The active Army image is strongest among the Army components, with a 67.9% average agreement that the Army offers these attributes. The Army image is stable across quarters among the PMAS, as shown in Table 5. As noted previously in the ACOMS Quarterly Reports (Keil et al, 1987), the images of the various Army components are moderate and weaker than the active Army image. The Army component image strength indicators are stable across quarters. The indicators of "image strength" for the USAR and the ARNG are very similar. Average agreement with the Reserve attributes for the SY86/87 is 58% and average agreement with the National Guard attributes is 57.8%. Table 5 presents the quarterly and school year percentages, and Figure 5 illustrates the stability and relative positions of the Army image strength indicators.

### Specific Army Perceptions Across Quarters

Since the attribute statements presented to ACOMS youth respondents are derived from the Army's advertising copy points, quarterly changes in specific perception items can be used to track youth responses to changes in emphases in the Army's advertising program. The U.S. Army Recruiting Command's (USAREC) trimester marketing plan emphasizes work-oriented and college-oriented attributes differentially depending on the school year cycle. Since the trimester and quarter boundaries do not match perfectly, the fall quarter has mixed target market, and thus plans include a correspondingly mixed message emphasis. The winter quarter is intended to emphasize college-oriented messages, and the spring quarter is intended to emphasize work-oriented messages.

While some of the attribute statements can be classified as primarily intended for specific markets, a large number are more general messages that are not clearly linked to specific timetables.

Table 5

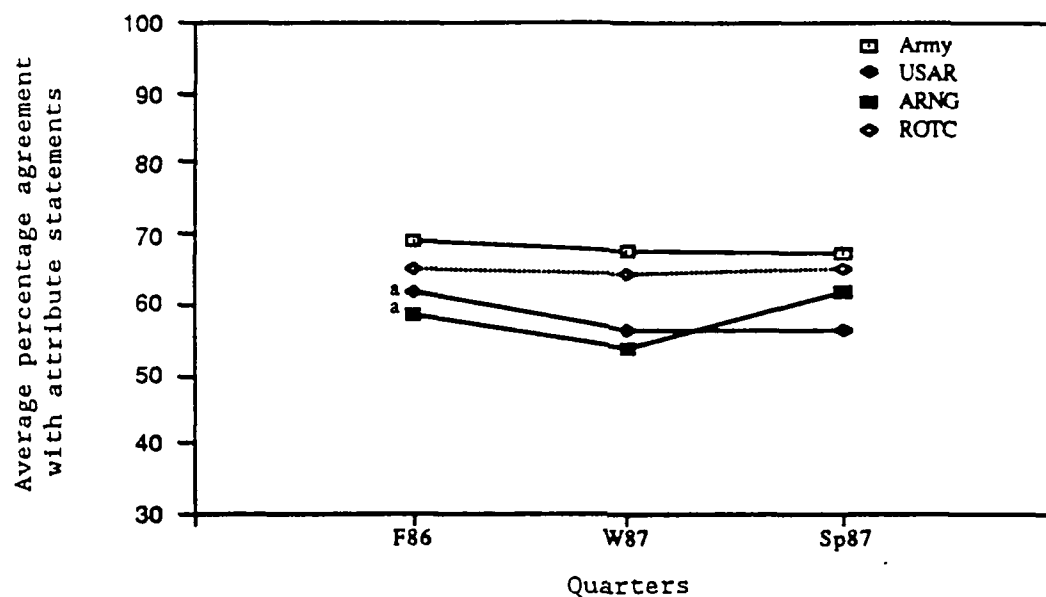
Army Image: Average Percentage of Primary Analytic Sample (PMAS)  
Agreeing with Army Component Attribute Statements

Army Component	<u>F86</u> (n)	<u>W87</u> (n)	<u>Sp87</u> (n)	<u>SY86/87</u> (n)
Army	68.9 (978)	67.7 (1359)	67.1 (1526)	67.9 (3863)
Army Reserve	61.9 <sup>a</sup> (150)	56.3 (231)	56.4 (246)	58.0 (627)
Army National Guard	58.4 <sup>a</sup> (131)	53.8 (219)	61.7 (248)	57.8 (598)
Reserve Officers' Training Corps <sup>b</sup>	65.1 (312)	64.4 (503)	65.0 (628)	64.9 (1443)

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

No quarter-to-quarter comparisons were found to be significant (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

<sup>a</sup>Part-time Work was not asked this quarter, thus average is computed with only 13 attributes. <sup>b</sup>ROTC percentages are for the ROTC Male Sample, not PMAS.



**Note.** ROTC line is dotted because percentages are for the ROTC Male Sample, not PMAS, and are based on fewer and different attributes than the other components.

<sup>a</sup>Part-time work was not asked this quarter, thus average is computed with 13 rather than 14 attributes.

**Figure 5.** Army component images among Primary Male Analytic Sample youth.

Table 6 lists the attribute statements aimed at the college- and work-oriented markets, and those that are not differentiated by target.

Table 7 shows the quarterly and school year percentages of PMAS who agree with each active Army attribute statement. (Although the statements are worded without specifying an Army component, i.e., "The Army offers ...", it is assumed that the responses refer to the active Army.) In general, the PMAS' perceptions are very stable across quarters. The attributes for which there is the highest degree of agreement are physical challenge (80.7%), hi-tech equipment (77.3%), money for education (75.7%), and becoming more mature and responsible (75%). The attributes for which there is the least agreement are stepping-stone between high school and college (45.4%), develop civilian career (52.3%), and job variety (57.2%). The stability of PMAS perceptions when examined by individual attribute suggests that the differential message emphases implied by the trimester plan may need stronger implementation in practice.

Table 8 shows the quarterly percentages of PMAS who agree with the USAR attribute statements. Again, the data are very stable across quarters. As noted previously in the ACOMS Quarterly Reports (Keil et al, 1987), agreement with USAR attributes is generally lower than that obtained for the Army attributes. The range of agreement is narrow; on the high end, about two-thirds of the PMAS agree that the USAR offers opportunities to become mature and responsible (67.1%), to work with highly-trained co-workers (64.5%), to live in one's hometown (64.4%), and that the USAR offers money for education (64.3%). The lowest levels of agreement are obtained for exciting weekends (41%), job variety (46.1%), and value for the civilian career development (49.3%).

Table 9 shows that the pattern of stability across quarters holds for the ARNG attributes as well. The response patterns resemble those obtained for the USAR. The highest levels of agreement are obtained for opportunities to become mature and responsible (70.2%) and for living in one's hometown (66.6%), while the lowest levels of agreement are found for statements that the ARNG offers opportunities for exciting weekends (45.1%), civilian career development (46.5%), and job variety (47.9%).

Finally, Table 10 shows the quarterly percentages of the ROTC Male Sample who agree with the ROTC attribute statements. Again, the data show great stability across quarters. There is a high level of agreement that the ROTC offers experiences about which one can be proud (73.7%), and that it offers opportunities to develop self-confidence (67.4%). Two ROTC questions that reflect knowledge more than perceptions also receive relatively high levels of agreement: 68.1% of the ROTC Male Sample agree that the ROTC can be taken as a college elective and 69.2% agree that an officer's commission can be obtained through the ROTC. The lowest levels of agreement are obtained for the statements that the ROTC offers leadership and management training (57.6%) and job variety (58.1%).

Table 6

Targets of Messages Measured by the Perceptions of Army Attributes Questions

<u>College-Oriented</u>		
An excellent opportunity to obtain money for college or vocational school	An opportunity to develop self-confidence	An officer's commission in the active Army, Army Reserve, or the Army National Guard (ROTC only)
An advantage over going right from high school to college	A mentally challenging experience	The opportunity to use your college-acquired skills (ROTC only)
An opportunity to develop leadership skills	The opportunity to make changes and use your own judgment: Reserve Officers' Training Corps (ROTC) only	Leadership and management training (ROTC only)
	A college elective that can be taken together with other college courses (ROTC only)	
<u>Both</u>		
A physically challenging environment	The chance to work with the latest high-tech equipment	The opportunity to develop your potential
An experience you can be proud of	An opportunity to become more mature and responsible	An excellent opportunity for part-time work
	Many chances to work with highly-trained people	
<u>Work-Oriented</u>		
Many opportunities for training in useful skill areas	A wide variety of opportunities to find a job you can enjoy	An opportunity to serve America while living in your own hometown
A great value in your civilian career development	Interesting and exciting weekends	

Table 7

Percentage of Primary Male Analytic Sample Agreeing with Active Army Attribute Statements

Attribute	<u>F86</u> ( <u>n</u> -978)	<u>W87</u> ( <u>n</u> -1359)	<u>Sp87</u> ( <u>n</u> -1526)	<u>SY86/87</u> ( <u>n</u> -3863)	<u>Z-scores</u>		
					F86- W87	W87- Sp87	F86- Sp87
Job Variety	57.1	58.0	56.5	57.2	--	--	--
Physical Challenge	83.7	79.3	79.1	80.7	2.07	--	1.97
Proud Experience	70.3	65.4	65.7	67.1	--	--	--
Step Between HS and College	44.5	46.0	45.7	45.4	--	--	--
Leader Skills	72.0	70.2	71.7	71.3	--	--	--
Hi-Tech Equipment	78.8	77.3	75.8	77.3	--	--	--
Civilian Career	54.1	51.1	51.9	52.3	--	--	--
Self-Confidence	70.4	70.9	71.5	70.9	--	--	--
Develop Potential	69.3	67.2	67.0	67.8	--	--	--
Mental Challenge	66.5	63.5	65.6	65.1	--	--	--
Mature and Responsible	76.5	74.4	74.2	75.0	--	--	--
Skill Training	71.4	73.6	71.6	72.3	--	--	--
Hi-Trained Co-Workers	74.0	71.9	71.7	72.5	--	--	--
Money for Education	75.7	78.9	72.0	75.7	--	3.11	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 8

Percentage of Primary Male Analytic Sample Agreeing with Army Reserve Attribute Statements

Attribute	F86 (n=150)	W87 (n=231)	Sp87 (n=246)	SY86/87 (n=627)	Z-scores		
					F86- W87	W87- Sp87	F86- Sp87
Job Variety	43.5	50.3	44.1	46.1	--	--	--
Proud Experience	66.1	54.5	54.8	58.2	--	--	--
Leader Skills	69.4	60.1	58.2	62.3	--	--	--
Civilian Career	56.1	37.5	56.0	49.3	2.56	--	--
Self-Confidence	67.8	61.3	54.2	61.0	--	--	--
Develop Potential	63.1	55.3	58.9	58.9	--	--	--
Mental Challenge	61.4	51.1	53.5	55.1	--	--	--
Mature and Responsible	70.3	70.5	60.5	67.1	--	--	--
Skill Training	65.7	61.3	63.9	63.5	--	--	--
Hi-Trained Co-Workers	67.9	62.3	63.6	64.5	--	--	--
Money for Education	63.6	66.1	62.9	64.3	--	--	--
Exciting Weekends	41.8	43.4	37.1	41.0	--	--	--
Part-Time Work	-- <sup>a</sup>	55.2	58.8	57.0	--	--	--
Live in Hometown	68.8	59.1	66.0	64.4	--	--	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

<sup>a</sup>This attribute was not asked this quarter in the Army Reserve perceptions module.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 9

Percentage of Primary Male Analytic Sample Agreeing with Army National Guard Attribute Statements

Attribute	F86 (n=131)	W87 (n=219)	Sp87 (n=248)	SY86/87 (n=598)	Z-scores		
					F86- W87	W87- Sp87	F86- Sp87
Job Variety	45.9	38.7	61.2	47.9	--	-3.66	--
Proud Experience	63.1	56.9	62.8	60.7	--	--	--
Leader Skills	62.8	56.0	66.1	61.3	--	--	--
Civilian Career	47.6	38.6	55.0	46.5	--	--	--
Self-Confidence	61.0	59.6	67.3	62.4	--	--	--
Develop Potential	58.5	55.2	59.4	57.6	--	--	--
Mental Challenge	60.6	45.3	56.5	53.8	--	--	--
Mature and Responsible	68.9	68.3	73.9	70.2	--	--	--
Skill Training	55.7	62.0	57.7	58.6	--	--	--
Hi-Trained Co-Workers	56.3	61.5	63.6	60.4	--	--	--
Money for Education	56.9	60.4	62.7	59.9	--	--	--
Exciting Weekends	53.7	33.2	49.2	45.1	2.22	--	--
Part-Time Work	-- <sup>a</sup>	51.8	65.4	58.4	--	--	--
Live in Hometown	68.7	64.4	66.8	66.6	--	--	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

<sup>a</sup>This attribute was not asked this quarter in the Army National Guard perceptions module.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).



Table 10

Percentage of Reserve Officers' Training Corps (ROTC) Male Sample  
Agreeing with Army ROTC Attribute Statements

Attribute	F86 (n=312)	W87 (n=503)	Sp87 (n=628)	SY86/87 (n=1443)	Z-scores		
					F86- W87	W87- Sp87	F86- Sp87
Leader/Management Training	53.5	56.3	62.2	57.6	--	--	--
Self-Confidence	65.4	71.2	65.8	67.4	--	--	--
College Elective	73.6	64.3	66.7	68.1	2.05	--	--
Officer's Commission	74.4	66.6	67.1	69.2	--	--	--
Job Variety	58.4	57.2	58.6	58.1	--	--	--
Proud Experience	73.9	73.8	73.4	73.7	--	--	--
Use College Skills	62.9	59.8	61.1	61.3	--	--	--
Use Own Judgment	58.8	66.0	65.2	63.5	--	--	--

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

No quarter-to-quarter comparisons were found to be significant (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

### Importance of Army Offers

ACOMS youth are questioned regarding the importance of the attributes emphasized in Army advertising to their plans for the next year. This set of questions includes a total of 19 attributes that correspond to either an active Army or USAR/ARNG perceptions question. The questions on attribute importance are measures of the extent to which the Army is emphasizing the features that are valued by the PMAS.

Table 11 shows the quarterly and school year percentages of PMAS who consider each attribute important in their plans for the near future. In addition, the table shows the average importance (averaged across attributes) of the set of attributes emphasized in Army advertising. The table shows that the average importance of the attributes emphasized by the Army is high and stable across quarters. For the SY86/87, an average of 79.5% consider the attributes important.

Figure 6 shows the attributes emphasized by Army advertising in decreasing order of importance. This relative order is generally stable across quarters. The figure shows that the attributes considered important by the highest percentages of PMAS have two major themes: "self development" and "career development." The self development values are reflected in the large percentages of PMAS who give importance to the opportunities to develop one's potential (91.5%) and self-confidence (87.2%), and to experiences of which one can be proud (89.3%). The job and career values are reflected in the large percentages who give importance to opportunities for civilian career development (90.3%), and job variety (88.2%).

The attributes that are valued by the smallest percentages of PMAS are mixed in content focus. The two attributes considered important by the fewest PMAS youth are features of the USAR and the ARNG: opportunities for part-time work (42.8%) and to live in one's hometown (45.1%). Low agreement levels are also found for an attribute emphasized for the college-oriented market, the opportunity to have a stepping-stone between high school and college (50.4%); and for two general attributes, service to country (58.5%) and the opportunity to work with high-tech equipment (63.8%).

Examination of the data on the importance of individual attributes show slightly more significant differences over time compared to the data on the perceptions of individual attributes. Table 11 shows the quarterly comparisons for which significant differences were obtained. While many of the changes are inconsistent across quarters and cannot be easily explained, a consistent declining pattern in a few attributes may signal a long-term trend and merit attention. Significant declines from the F86 to Sp87 were obtained for the importance of opportunities to develop leadership skills, civilian career, one's potential, and opportunities to be mentally challenged. No interpretation for these declines is readily available.

Table 11

Percentage of Primary Male Analytic Sample Rating Army Component  
Attributes as Important

Attribute	F86	W87	Sp87	SY86/87	Z-scores		
	(n=1037)	(n=1445)	(n=1614)	(n=4096)	F86- W87	W87- Sp87	F86- Sp87
<u>Army, Army Reserve and Army National Guard</u>							
Job Variety	-- <sup>a</sup>	88.9	87.6	88.2	N/A	N/A	--
Physical Challenge	78.9	79.1	76.8	78.3	--	--	--
Proud Experience	87.6	91.7	89.3	89.6	-2.54	2.12	--
Step Between HS and College	45.2	53.6	52.0	50.4	-2.86	--	-2.31
Leader Skills	79.9	76.9	75.8	77.5	--	--	2.00
Hi-Tech Equipment	64.8	64.5	62.0	63.8	--	--	--
Civilian Career	92.9	90.6	87.2	90.3	--	2.53	4.48
Self-Confidence	88.3	87.6	85.7	87.2	--	--	--
(table continued)							

(table continued)

Note. Percentages are weighted data based on number of respondents in parentheses in the table.

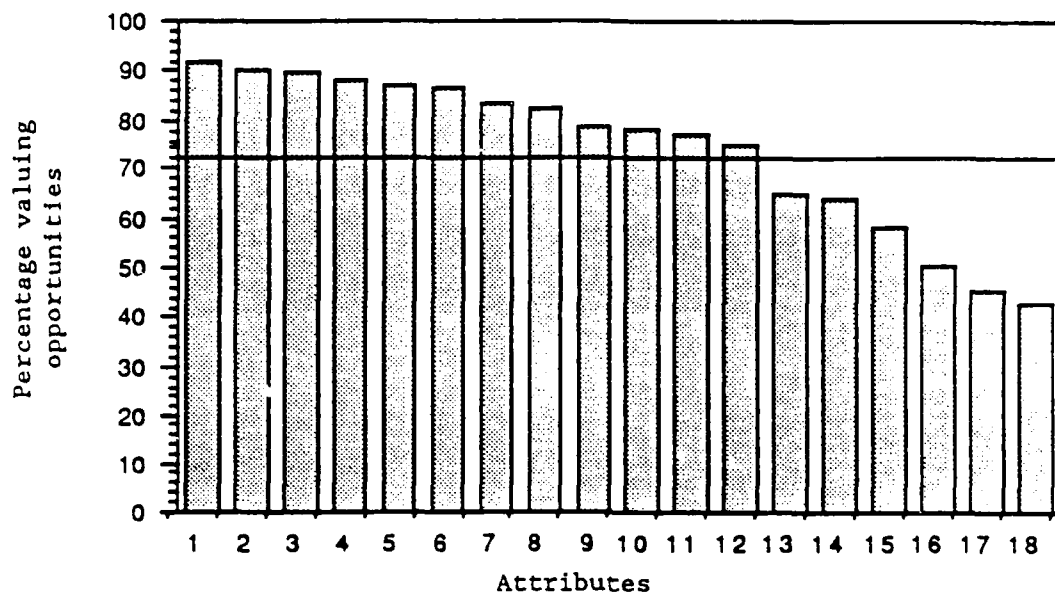
<sup>a</sup>This attribute not asked this quarter in importance module. <sup>b</sup>Average computed using 16 rather than 18 attributes for F86. <sup>c</sup>ROTC percentages are for the ROTC Male Sample, not PMAS. <sup>d</sup>Average computed using 4 rather than 5 attributes for F86.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2$  s.e.).

Table 11

Percentage of Primary Male Analytic Sample Rating Army Component  
Attributes as Important (continued)

Attribute	F86 (n=1037)	W87 (n=1445)	Sp87 (n=1614)	SY86/87 (n=4096)	Z-scores		
					F86- W87	W87- Sp87	F86- Sp87
Develop Potential	93.3	91.5	89.8	91.5	--	--	2.75
Mental Challenge	85.0	82.8	80.1	82.7	-4.69	--	2.66
Mature and Responsible	85.5	88.3	85.9	86.6	--	--	--
Skill Training	81.6	84.5	84.4	83.5	--	--	--
Hi-Trained Co-Workers	78.0	80.5	78.0	78.8	--	--	--
Money for Education	65.0	66.2	64.4	65.2	--	--	--
Serve Country	62.1	56.0	57.5	58.5	2.20	--	--
Exciting Weekends	76.6	76.1	73.7	75.5	--	--	--
Part-Time Work	-- <sup>a</sup>	43.5	42.1	42.8	N/A	N/A	--
Live in Hometown	39.4	48.8	47.8	45.4	-3.58	-3.60	--
Average	75.3 <sup>b</sup>	75.1	73.3	79.5	.		
<u>Reserve Officers' Training Corps</u>							
Leader Skills	82.5	77.1	78.1	79.2	2.25	--	--
Self-Confidence	87.1	86.5	85.4	86.3	--	--	--
Job Variety	-- <sup>a</sup>	91.6	90.3	90.9	N/A	N/A	--
Proud Experience	86.4	91.0	88.7	88.7	-2.37	--	--
Use Own Judgment	88.7	92.2	89.9	90.3	-2.10	--	--
Average	86.2 <sup>d</sup>	87.7	87.1	87.1	--	--	--



**Key:**

- |                          |                            |
|--------------------------|----------------------------|
| 1. Develop Potential     | 10. Physical Challenge     |
| 2. Civilian Career       | 11. Leader Skills          |
| 3. Proud Experience      | 12. Exciting Weekends      |
| 4. Job Variety           | 13. Money for Education    |
| 5. Self-Confidence       | 14. Hi-Tech Equipment      |
| 6. Mature & Responsible  | 15. Serve Country          |
| 7. Skill Training        | 16. Step Between HS & Col. |
| 8. Mental Challenge      | 17. Live in Hometown       |
| 9. Hi-Trained Co-Workers | 18. Part-Time Work         |

Note. Attributes are presented in descending order of importance.

Figure 6. Percentage of Primary Male Analytic Sample youth valuing Army component attributes.

Table 11 also shows the percentages of the ROTC Male Sample who consider the ROTC attributes important. The attributes emphasized by the ROTC are considered important by a large proportion of their target market; for the SY86/87, the percentages of the ROTC Male Sample who consider the ROTC important range from highs of 90.9% (job variety) and 90.3% (opportunities to use one's own judgment) to a relative low of 79.2% (leadership skills). Two attributes (experience to be proud of and the opportunities to use one's own judgment) increased in importance from the F86 to W87, while one (leadership skills) decreased in importance during the same period. Again, no interpretation of these changes are readily available.

#### The Importance of Army Offers Compared to the Perceptions of Offers

Comparisons between the percentages of PMAS who consider an attribute important with the percentages who agree that the Army offers those attributes yield importance-perception gap indicators. Gaps may point to areas needing additional emphases in Army advertising, and those needing little or no additional emphasis. Tables 12 to 15 present the quarterly and school year data on these comparisons for the Army, USAR, ARNG, and ROTC, respectively. When the importance point is higher than the corresponding perception point, this is reflected as a positive difference in the tables. Positive differences may indicate the need to put greater advertising emphases on the attributes. When the perception point is higher than the corresponding importance point, this is reflected as a negative difference in the tables. Negative differences may indicate that an attribute is "oversold" or at least needs no further emphasis at this point.

In general, the importance-perception gaps are stable across quarters. Figures 7 to 10 illustrate the importance-perception comparisons for Army components during the SY86/87. The comparisons are arrayed in descending order of the importance questions, starting from the attribute rated important by the greatest percentage of PMAS (opportunities to develop potential) on the left, and proceeding to the attribute that was rated as important by the smallest percentage of PMAS youth (part-time work). To facilitate comparisons across components, the same set of attributes are portrayed for the various Army components, although the sets of relevant perceptions questions differ slightly by component. "Gaps" between the importance and perception of each attribute are indicated by the vertical lines connecting the importance and perception points. The figure therefore presents information regarding the magnitudes and directions of the gap for each attribute, as well as the relative importance of the attributes for which gaps are observed.

As Figure 8 shows, larger importance-perception gaps are obtained for the attributes that are rated as important by the greatest proportions of PMAS (i.e., develop potential, civilian career development, having experiences to be proud of, and job variety). "Reverse gaps", i.e., where larger percentages of PMAS youth perceive the attributes as present in the Army than the percentages considering the attribute important, are found for physical challenge, money for education, and

Table 12

Primary Male Analytic Sample Importance-Perception Gaps for Army Attributes

	F86	W87	Sp87	SY86/87	Z-scores for differences		
	F86- W87	W87- Sp87			F86- W87	W87- Sp87	F86- Sp87
<u>Job Variety</u>							
Importance	-- <sup>a</sup>	88.9	87.6	88.2			
Perception	57.1	58.0	56.5	57.2			
Difference	N/A	30.9	30.9	31.0	N/A	--	N/A
<u>Physical Challenge</u>							
Importance	78.9	79.1	76.8	78.3			
Perception	83.7	79.3	79.1	80.7			
Difference	-4.8	-0.2	-2.3	-2.4	--	--	--
<u>Proud Experience</u>							
Importance	87.6	91.7	89.3	89.6			
Perceptions	70.3	65.4	65.7	67.1			
Difference	17.3	26.3	23.6	22.5	-2.76	--	-2.10
<u>Step Between H.S. and Col.</u>							
Importance	45.2	53.6	52.0	50.4			
Perception	44.5	46.0	45.7	45.4			
Difference	0.7	7.6	6.3	5.0	--	--	--
<u>Leader Skills</u>							
Importance	79.9	76.9	75.8	77.5			
Perception	72.0	70.2	71.7	71.3			
Difference	7.9	6.7	4.1	6.2	--	--	--
<u>Hi-Tech Equipment</u>							
Importance	64.8	64.5	62.0	63.8			
Perception	78.8	77.3	75.8	77.3			
Difference	-14.0	-12.8	-13.8	-13.5	--	--	--
<u>Civilian Career</u>							
Importance	92.9	90.6	87.2	90.3			
Perception	54.1	51.1	51.9	52.3			
Difference	38.8	39.5	35.3	38.0	--	--	--

(table continued)

(table continued)

Note. Percentages are weighted data based on number of respondents presented under Sample Sizes in the table.

<sup>a</sup>This attribute was not asked in importance module F86.

Z-scores are presented for significant quarter-to-quarter difference comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 12

Primary Male Analytic Sample Importance-Perception Gaps for Army  
Attributes (continued)

					Z-scores for differences		
	F86	W87	Sp87	SY86/87	F86- W87	W87- Sp87	F86- Sp87
<u>Self-Confidence</u>							
Importance	88.3	87.6	85.7	87.2			
Perception	70.4	70.9	71.5	70.9			
Difference	17.9	16.7	14.2	16.3	--	--	--
<u>Develop Potential</u>							
Importance	93.3	91.5	89.8	91.5			
Perception	69.3	67.2	67.0	67.8			
Difference	24.0	24.3	22.8	23.7	--	--	--
<u>Mental Challenge</u>							
Importance	85.0	82.8	80.1	82.7			
Perception	66.5	63.5	65.6	65.1			
Difference	18.5	19.3	14.5	17.6	--	--	--
<u>Mature and Responsible</u>							
Importance	85.5	88.3	85.9	86.6			
Perception	76.5	74.4	74.2	75.0			
Difference	9.0	13.9	11.7	11.6	--	--	--
<u>Skill Training</u>							
Importance	81.6	84.5	84.4	83.5			
Perception	71.4	73.6	71.6	72.3			
Difference	10.2	10.9	12.8	11.2	--	--	--
<u>Hi-Trained Co-Workers</u>							
Importance	78.0	80.5	78.0	78.8			
Perception	74.0	71.9	71.7	72.5			
Difference	4.0	8.6	6.3	6.3	--	--	--
<u>Money for Education</u>							
Importance	65.0	66.2	64.4	65.2			
Perception	75.7	78.9	72.0	75.7			
Difference	-10.7	-12.7	-7.6	-10.5	--	--	--
<u>Sample Sizes</u>							
Importance	1037	1445	1614	4096			
Perception	978	1359	1526	3863			



Table 13

## Primary Male Analytic Sample Importance-Perception Gaps for Army Reserve Attributes

					Z-scores for differences		
	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	F86- W87	W87- Sp87	F86- Sp87
<u>Job Variety</u>							
Importance	-- <sup>a</sup>	88.9	87.6	88.2			
Perception	43.2	50.3	44.1	46.1			
Difference	N/A	38.6	43.3	42.1	N/A	--	N/A
<u>Proud Experience</u>							
Importance	87.6	91.7	89.3	89.6			
Perception	66.1	54.5	54.8	58.2			
Difference	21.5	37.2	34.5	31.4	-2.13	--	--
<u>Leader Skills</u>							
Importance	79.9	76.9	75.8	77.5			
Perception	69.4	60.1	58.2	62.3			
Difference	10.5	16.8	17.6	15.2	--	--	--
<u>Civilian Career</u>							
Importance	92.9	90.6	87.2	90.3			
Perception	56.1	37.5	56.0	49.3			
Difference	36.8	53.1	31.2	41.0	-2.20	3.33	--
<u>Self-Confidence</u>							
Importance	88.3	87.6	85.7	87.2			
Perception	67.8	61.3	54.2	61.0			
Difference	20.5	26.3	31.5	26.2	--	--	--
<u>Develop Potential</u>							
Importance	93.3	91.5	89.8	91.5			
Perception	63.1	55.3	58.9	58.9			
Difference	30.2	36.2	30.9	32.6	--	--	--
<u>Mental Challenge</u>							
Importance	85.0	82.8	80.1	82.7			
Perception	61.4	51.1	53.5	55.1			
Difference	23.6	31.7	26.6	27.6	--	--	--
(table continued)							

(table continued)

Note. Percentages are weighted data based on number of respondents presented under Sample Sizes in the table.

<sup>a</sup>This attribute was not asked in importance module F86. <sup>b</sup>This attribute was not asked in Army Reserve perceptions module F86.

Z-scores are presented for significant quarter-to-quarter difference comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 13

## Primary Male Analytic Sample Importance-Perception Gaps for Army Reserve Attributes (continued)

	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	<u>Z-scores for differences</u>		
					<u>F86- W87</u>	<u>W87- Sp87</u>	<u>F86- Sp87</u>
<u>Mature and Responsible</u>							
Importance	85.5	88.3	85.9	86.6			
Perception	70.3	70.5	60.5	67.1			
Difference	15.2	17.8	25.4	19.5	--	--	--
<u>Skill Training</u>							
Importance	81.6	84.5	84.4	83.5			
Perception	65.7	61.3	63.9	63.5			
Difference	15.9	23.2	20.5	20.0	--	--	--
<u>Hi-Trained Co-Workers</u>							
Importance	78.0	80.5	78.0	78.8			
Perception	67.9	62.3	63.6	64.5			
Difference	10.1	18.2	14.4	14.3	--	--	--
<u>Money for Education</u>							
Importance	65.0	66.2	64.4	65.2			
Perception	63.6	66.1	62.9	64.3			
Difference	1.4	0.1	1.5	0.9	--	--	--
<u>Exciting Weekends</u>							
Importance	76.6	76.1	73.7	75.5			
Perception	41.8	43.4	37.1	41.0			
Difference	34.8	32.7	36.6	34.5	--	--	--
<u>Part-Time Work</u>							
Importance	-- <sup>a</sup>	43.5	40.0	42.8			
Perception	-- <sup>b</sup>	55.2	58.8	57.0			
Difference	N/A	-11.7	-18.8	-14.2	N/A	--	N/A
<u>Live in Hometown</u>							
Importance	39.4	48.8	47.8	45.4			
Perception	68.8	59.1	66.0	64.4			
Difference	-29.4	-10.3	-18.2	-19.0	-2.72	--	--
<u>Sample Sizes</u>							
Importance	1037	1445	1614	4096			
Perception	150	231	246	627			

Table 14

Primary Male Analytic Sample Importance-Perception Gaps for Army National Guard Attributes

	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	<u>Z-scores for differences</u>		
					<u>F86- W87</u>	<u>W87- Sp87</u>	<u>F86- Sp87</u>
<u>Job Variety</u>							
Importance	-- <sup>a</sup>	88.9	87.4	88.2			
Perception	45.9	38.7	61.2	47.9			
Difference	N/A	50.2	26.2	40.3	N/A	3.81	N/A
<u>Proud Experience</u>							
Importance	87.6	91.7	89.3	89.6			
Perception	63.1	56.9	62.8	60.7			
Difference	24.5	34.8	26.5	28.9	--	--	--
<u>Leader Skills</u>							
Importance	79.9	76.9	75.8	77.5			
Perception	62.8	56.0	66.1	61.3			
Difference	17.1	20.9	9.7	16.2	--	--	--
<u>Civilian Career</u>							
Importance	92.9	90.6	87.2	90.3			
Perception	47.6	38.6	55.0	46.5			
Difference	45.3	52.0	32.2	43.8	--	2.75	--
<u>Self-Confidence</u>							
Importance	88.3	87.6	85.7	87.2			
Perception	61.0	59.6	67.3	62.4			
Difference	27.3	28.0	18.4	24.8	--	--	--
<u>Develop Potential</u>							
Importance	93.3	91.5	89.8	91.5			
Perception	58.5	55.2	59.4	57.6			
Difference	34.8	36.3	30.4	33.9	--	--	--
<u>Mental Challenge</u>							
Importance	85.0	82.8	80.1	82.7			
Perception	60.6	45.3	56.5	53.8			
Difference	24.8	37.5	23.6	28.9	--	--	--

(table continued)

Note. Percentages are weighted data based on number of respondents presented under Sample Sizes in the table.

<sup>a</sup>This attribute was not asked in importance module F86. <sup>b</sup>This attribute was not asked in Army National Guard perceptions module F86.

Z-scores are presented for significant quarter-to-quarter difference comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 14

Primary Male Analytic Sample Importance-Perception Gaps for Army National Guard Attributes (continued)

	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	<u>Z-scores for differences</u>		
					<u>F86- W87</u>	<u>W87- Sp87</u>	<u>F86- Sp87</u>
<u>Mature and Responsible</u>							
Importance	85.5	88.3	85.9	86.6			
Perception	68.9	68.3	73.9	70.2			
Difference	16.6	20.0	12.0	16.4	--	--	--
<u>Skill Training</u>							
Importance	81.6	84.5	84.4	83.5			
Perception	55.7	62.0	57.7	58.6			
Difference	25.9	22.5	26.7	24.9	--	--	--
<u>Hi-Trained Co-Workers</u>							
Importance	78.0	80.5	78.0	78.8			
Perception	56.3	61.5	63.6	60.4			
Difference	21.7	19.0	14.4	18.4	--	--	--
<u>Money for Education</u>							
Importance	65.0	66.2	64.4	65.2			
Perception	56.9	60.4	62.7	59.9			
Difference	8.1	5.8	1.7	5.3	--	--	--
<u>Exciting Weekends</u>							
Importance	76.6	76.1	73.7	75.5			
Perception	53.7	33.2	49.2	45.1			
Difference	22.9	42.9	24.5	30.4	-2.11	-2.29	--
<u>Part-Time Work</u>							
Importance	-- <sup>a</sup>	43.5	40.0	42.8			
Perception	-- <sup>b</sup>	51.8	65.4	58.4			
Difference	N/A	-8.3	-25.4	-15.6	N/A	2.26	N/A
<u>Live in Hometown</u>							
Importance	39.4	48.8	47.8	45.4			
Perception	68.7	64.4	66.8	66.6			
Difference	-29.3	-15.6	-19.0	-21.2	--	--	--
<u>Sample Sizes</u>							
Importance	1037	1445	1614	4096			
Perception	131	219	248	598			

Table 15

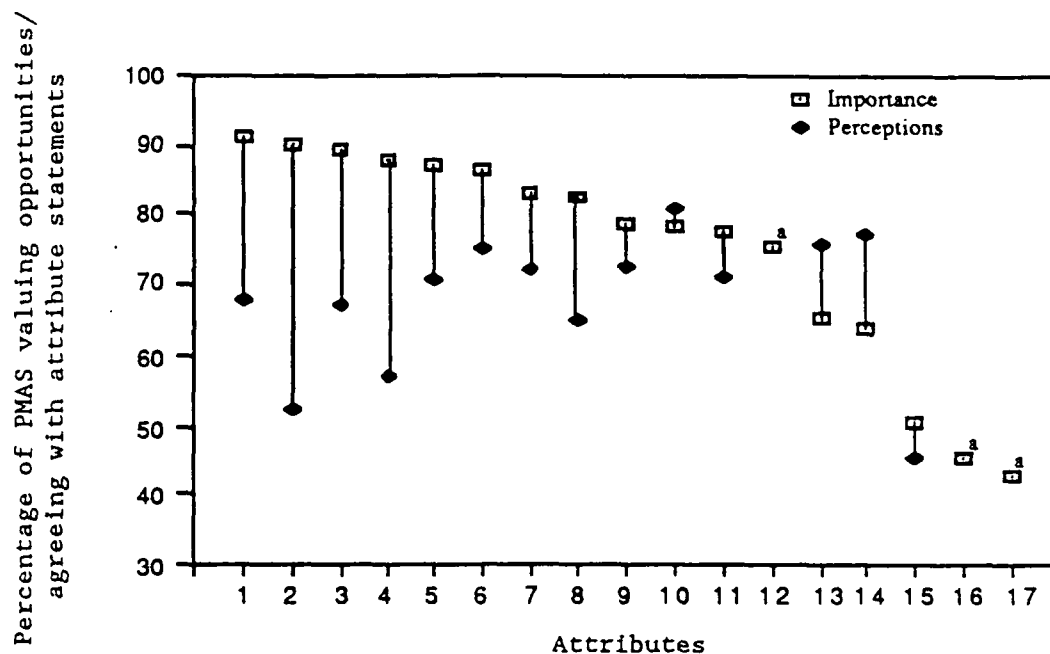
## Reserve Officers' Training Corps (ROTC) Male Sample Importance-Perception Gaps for ROTC Attributes

	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	<u>Z-scores</u> <u>for differences</u>		
					<u>F86-</u> <u>W87</u>	<u>W87-</u> <u>Sp87</u>	<u>F86-</u> <u>Sp87</u>
<hr/>							
<u>Leader Skills</u>							
Importance	82.5	77.1	78.1	79.2			
Perception	53.5	56.3	62.2	57.6			
Difference	29.0	20.8	15.9	21.6	--	--	2.49
<u>Self-Confidence</u>							
Importance	87.1	86.5	85.4	86.3			
Perception	65.4	71.2	65.8	67.4			
Difference	21.7	15.3	19.6	18.9	--	--	--
<u>Job Variety</u>							
Importance	-- <sup>a</sup>	91.6	90.3	90.9			
Perception	58.4	57.2	58.6	58.1			
Difference	N/A	34.4	31.7	32.8	--	--	--
<u>Proud Experience</u>							
Importance	86.4	91.0	88.7	88.7			
Perception	73.9	73.3	73.4	73.7			
Importance	12.5	17.2	15.3	15.0	--	--	--
<u>Use Own Judgement</u>							
Importance	88.7	92.2	89.9	90.3			
Perception	58.8	66.0	65.2	63.5			
Difference	29.9	26.2	24.7	26.8	--	--	--
<u>Sample Sizes</u>							
Importance	695	961	1157				
Perception	312	503	628				

Note. Percentages are weighted data based on number of respondents presented under Sample Sizes in the table.

<sup>a</sup>This attribute was not asked in ROTC importance module F86.

Z-scores are presented for significant quarter-to-quarter difference comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).



Key:

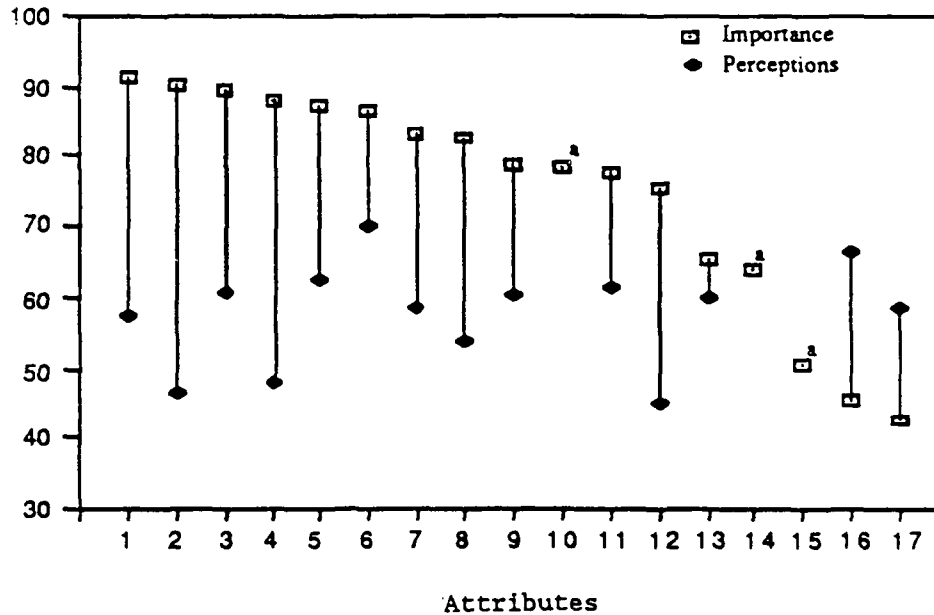
- |                          |                            |
|--------------------------|----------------------------|
| 1. Develop Potential     | 10. Physical Challenge     |
| 2. Civilian Career       | 11. Leader Skills          |
| 3. Proud Experience      | 12. Exciting Weekends      |
| 4. Job Variety           | 13. Money for Education    |
| 5. Self-Confidence       | 14. Hi-Tech Equipment      |
| 6. Mature & Responsible  | 15. Step Between HS & Col. |
| 7. Skill Training        | 16. Live in Hometown       |
| 8. Mental Challenge      | 17. Part-Time Work         |
| 9. Hi-Trained Co-Workers |                            |

Note. Attributes are presented in descending order of importance to aid interpretation.

<sup>a</sup> This attribute is not asked in Army perceptions module.

Figure 7. Primary Male Analytic Sample youth importance-perception gaps for Army attributes.

Percentage of PMAS valuing opportunities/  
agreeing with attribute statements



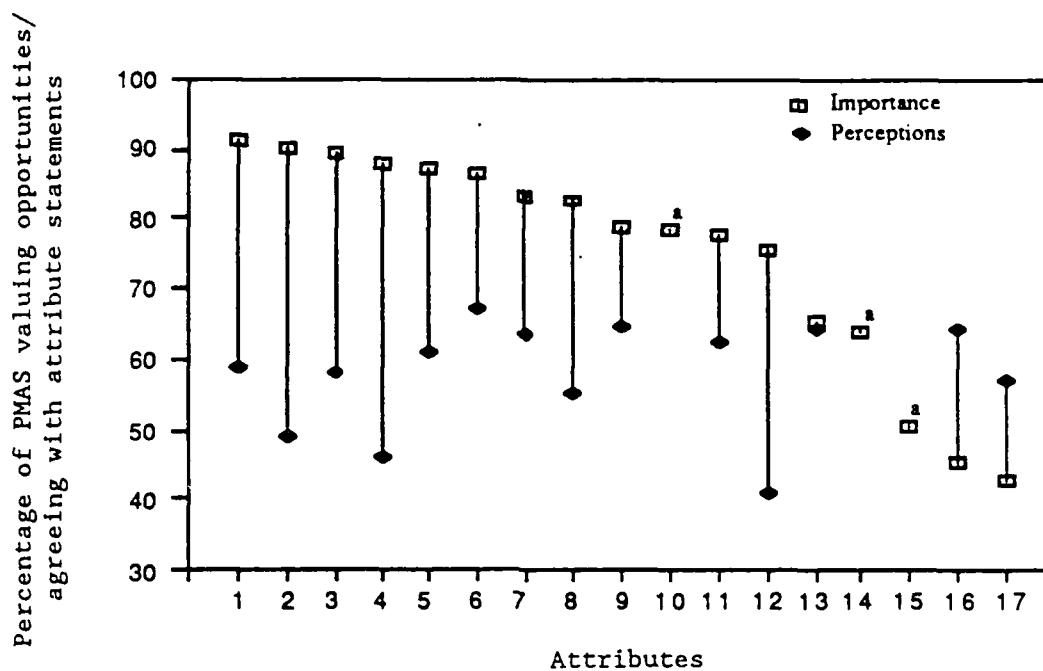
Key:

- |                          |                            |
|--------------------------|----------------------------|
| 1. Develop Potential     | 10. Physical Challenge     |
| 2. Civilian Career       | 11. Leader Skills          |
| 3. Proud Experience      | 12. Exciting Weekends      |
| 4. Job Variety           | 13. Money for Education    |
| 5. Self-Confidence       | 14. Hi-Tech Equipment      |
| 6. Mature & Responsible  | 15. Step Between HS & Col. |
| 7. Skill Training        | 16. Live in Hometown       |
| 8. Mental Challenge      | 17. Part-Time Work         |
| 9. Hi-Trained Co-Workers |                            |

Note. Attributes are presented in descending order of importance to aid interpretation.

<sup>a</sup>This attribute is not asked in Army National Guard perceptions module.

Figure 8. Primary Male Analytic Sample youth importance-perception gaps for Army National Guard attributes.



Key:

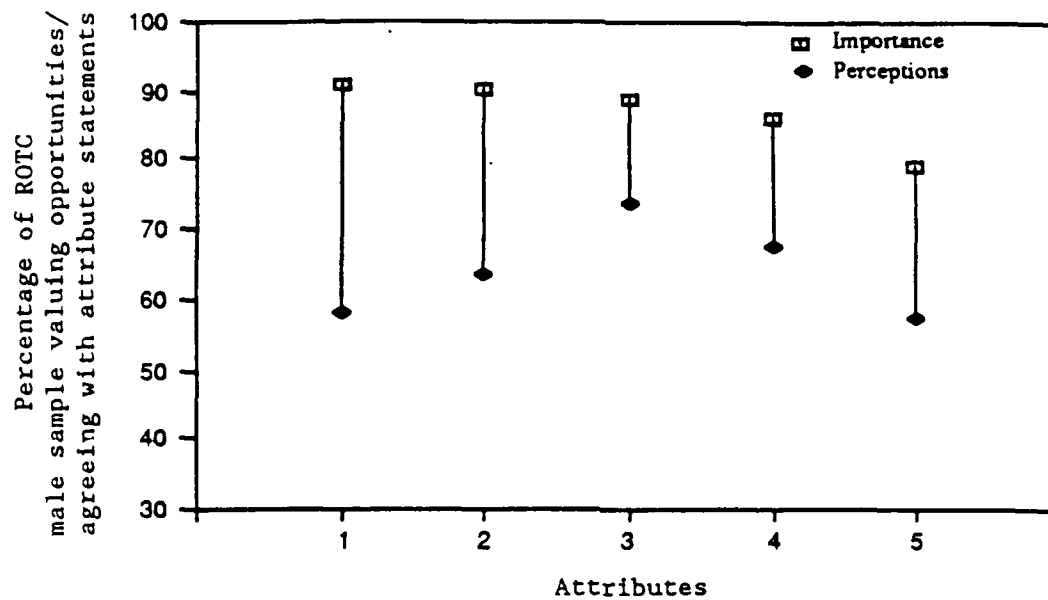
- |                          |                            |
|--------------------------|----------------------------|
| 1. Develop Potential     | 10. Physical Challenge     |
| 2. Civilian Career       | 11. Leader Skills          |
| 3. Proud Experience      | 12. Exciting Weekends      |
| 4. Job Variety           | 13. Money for Education    |
| 5. Self-Confidence       | 14. Hi-Tech Equipment      |
| 6. Mature & Responsible  | 15. Step Between HS & Col. |
| 7. Skill Training        | 16. Live in Hometown       |
| 8. Mental Challenge      | 17. Part-Time Work         |
| 9. Hi-Trained Co-Workers |                            |

Note. Attributes are presented in descending order of importance to aid interpretation.

\*This attribute is not asked in Army perceptions module.

Figure 9. Primary Male Analytic Sample youth importance-perception gaps for Army Reserve attributes.





**Key:**

1. Job Variety
2. Use Own Judgment
3. Proud Experience
4. Self-Confidence
5. Leader Skills

Note. Attributes are presented in descending order of importance to aid interpretation.

Figure 10. Reserve Officers' Training Corps Male Sample importance-perception gaps for ROTC attributes.

high-tech equipment. Reverse gaps may possibly indicate areas in the Army image that are "oversold" in the advertising program.

Very similar results are obtained for the Army Reserve and National Guard. Figures 9 and 10 show the importance-perception gaps for the Army Reserve and National Guard attributes, respectively. The importance-perception gaps for the Reserve attributes are generally larger than those obtained for the Army attributes because their perception measures are generally lower the Army measures. Most of the large gaps are found again for the attributes considered important by the great majority of youth, i.e., the opportunities to develop one's potential, civilian career, experiences to be proud of, and job variety. There is also a very large gap obtained for one of the attributes emphasized particularly by the reserve advertising, exciting weekends. "Reverse gaps" are found for two other attributes emphasized by the USAR, living in one's hometown and part-time work opportunities.

Finally, Figure 10 shows the importance-perception gaps for the ROTC attributes. The largest gaps are those found for job variety and the opportunity to use one's own judgment. The smallest gap is found for the statement that the ROTC provides experiences of which one can be proud.

#### Unaided Recall of Army Advertising

Advertising recall is an important general measure of the impact of advertising. In the ACOMS interview, unaided recall measures are obtained spontaneously for mentions of the Army's components and other military services when asked about the services for which they recalled seeing or hearing any form of advertising.

Table 16 presents the percentages of PMAS recalling Army and other service advertising unaided. As noted in the ACOMS Quarterly Reports, the unaided recall of Army advertising is substantially higher than recall of specific Army components or the other services. Recall of active Army advertising is both high and stable across quarters, averaging 83.5% for SY86/87.

Unaided recall of the Army ROTC, ARNG and USAR advertising are substantially lower than the active Army for SY86/87 (3.6%, 22.2%, and 13.1%, respectively). Unaided recall for the Army components declined significantly over the year. Decline in ROTC recall was significant from F86 to W87 (4.7% to 1.5%;  $z=3.25$ ,  $p<.05$ ) . The low winter level was maintained in the spring, so that the F86 to Sp87 decline was also statistically significant. The decline in unaided recall occurred later for the USAR, which showed a significant decrease from W87 to Sp87, (12.8% to 9%,  $z=3.16$ ,  $p<.05$ ). Again, since levels for fall and winter were similar, a significant decline was also observed for the F86 to Sp87 comparison. Finally, a steady decline was observed each quarter for unaided recall of ARNG advertising with significant declines from W87 to Sp87 (14.6% to 11.6%;  $z=2.11$ ,  $p<.05$ ) and from F86 to Sp87 (17.9% to 11.6%,  $z=3.43$ ,  $p<.05$ ). Figure 11 shows the quarterly comparisons of unaided recall for the Army components.

Table 16

Percentage of Primary Male Analytic Sample With Unaided Recall of Army and Other Military Advertising

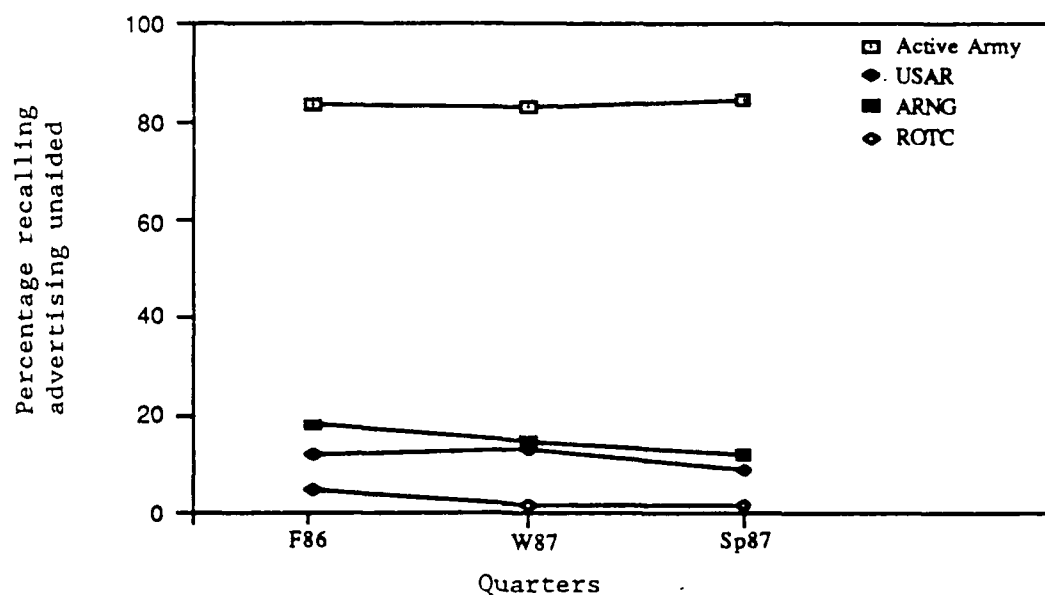
	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>	<u>Z-scores</u>		
	( <u>n</u> -1037)	( <u>n</u> -1445)	( <u>n</u> -1614)	( <u>n</u> -4096)	<u>F86-</u> <u>W87</u>	<u>W87-</u> <u>Sp87</u>	<u>F86-</u> <u>Sp87</u>
<hr/>							
<u>Army Components</u>							
Active	83.3	82.9	84.3	83.5	--	--	--
ROTC <sup>a</sup>	4.7	1.5	1.8	3.6	3.25	--	3.06
ARNG	17.9	14.6	11.6	22.2	--	2.11	3.43
USAR	12.1	12.8	9.0	13.1	--	3.16	--
 <u>Other Military Branches</u>							
USAF	65.5	66.0	66.2	65.9	--	--	--
Navy	58.2	62.8	61.2	60.6	--	--	--
USMC	66.2	66.9	65.4	66.2	--	--	--
USCG	16.8	14.0	14.4	15.0	--	--	--

Note. Percentages are weighted data based on number of respondents presented in parentheses in the table.

Active: Active Army; ROTC: Reserve Officers' Training Corps; ARNG: Army National Guard; USAR: Army Reserve; USAF: Air Force; USMC: Marine Corps; USCG: Coast Guard.

<sup>a</sup>ROTC percentages include only PMAS youth who said they would definitely or probably attend college. Sample sizes are as follows: F86, n=750; W87, n=1079; Sp87, n=1158; SY86/87, n=2987.

Z-scores are presented for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).



Note. ROTC percentages include only PMAS youth who said they would definitely or probably attend college.

Figure 11. Percentage of Primary Male Analytic Sample youth with unaided recall of Army component advertising.

### Unaided Recall of Other Military Advertising

About two-thirds of the PMAS youth recalled, unaided, seeing or hearing advertising from the USAF, Navy, or USMC, (Table 16). Substantially lower recall levels were obtained for the USCG (15%). No significant differences across quarters were observed for unaided recall of any other military service. Figure 12 shows the quarterly comparisons of unaided recall for the active Army and the other military services.

### Knowledge of Army Offers

ACOMS youth are asked a series of questions that assess their knowledge of general (e.g., Is it possible to earn money for college by enlisting in the Army?) and specific (e.g., How much do you think can be earned through Army education benefits?) aspects of Army offers. Table 17 shows the percentages of PMAS who answered the Army knowledge questions correctly by quarter and for the school year as a whole. Knowledge about Army offers are generally stable across quarters. As noted in previous reports, there is a very high level of awareness about the Army's education benefits in general.

Among PMAS, 94.7% knew that it was possible to earn money for college by enlisting in the Army in SY86/87; 85.6% were aware that the Army offers the GI Bill; and 85% were aware that delayed entry was allowed into the Army. These knowledge indicators were stable across quarters. The high level of awareness about the Army GI bill is particularly notable in comparison to knowledge that the other services made the same offer. For SY86/87, 46%, 45.9% and 54% of PMAS were aware that the Air Force, Navy and Marine Corps, respectively, also offered the GI Bill.

Knowledge about specific features of Army offers is less widespread, as might be expected. PMAS respondents were not very aware of the amount that could be earned through Army education benefits, nor were many aware that the Army education benefits were better than those offered by the other services. These questions were answered correctly by 25.8% and 14.6% of the PMAS, respectively. Further, only 39.8% responded correctly to the question regarding the minimum obligation for active duty in the Army. While it is not surprising that there is relatively low awareness of the exact amount of money that could be earned through the Army education benefits, the low percentage responding that the Army offers better benefits than the other military services may be worth noting. Similarly, the relatively low percentage of PMAS who are informed about the minimum duty tour may point to an area for increased recruiter or advertising emphasis.

Table 18 shows the percentages of PMAS who responded correctly to the questions about the USAR and ARNG offers. Here again, the highest level of awareness (85.6% for SY86/87) was obtained for the question regarding the potential of earning money for college through the ARNG

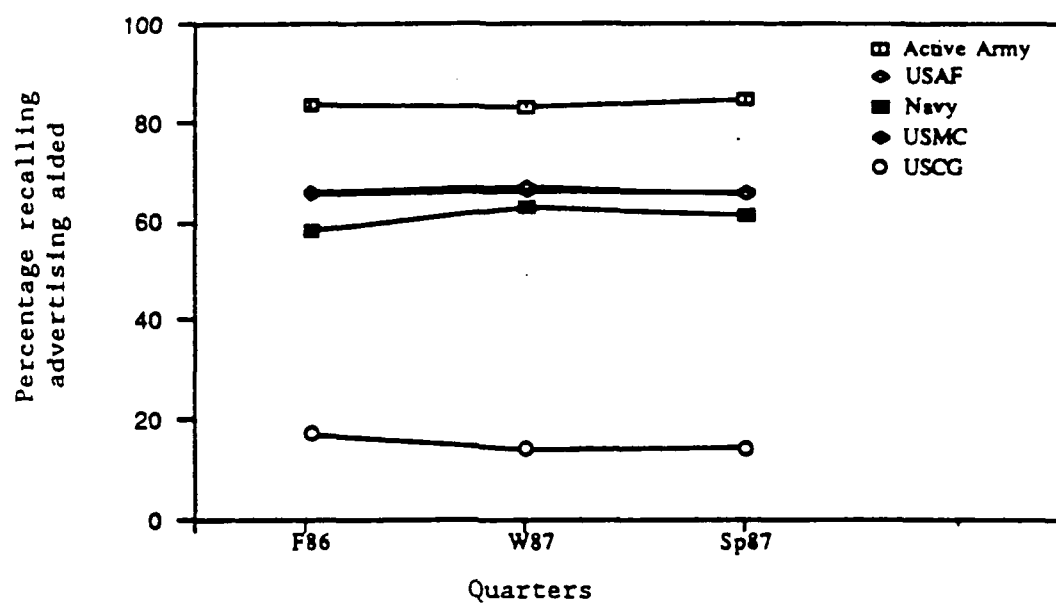


Figure 12. Percentage of Primary Male Analytic Sample youth with unaided recall of Army and other military advertising.

Table 17

Percentage of Primary Male Analytic Sample Answering Army Knowledge Questions Correctly

Knowledge Item	<u>F86</u> ( <u>n</u> =524)	<u>W87</u> ( <u>n</u> =747)	<u>Sp87</u> ( <u>n</u> =881)	<u>SY86/87</u> ( <u>n</u> =2082)	<u>Z-scores</u>		
					<u>F86-</u> <u>W87</u>	<u>W87-</u> <u>Sp87</u>	<u>F86-</u> <u>Sp87</u>
Ed. Ben. Eligibility	94.7	95.4	94.1	94.7	--	--	--
Total Ed. Benefits	24.4	26.8	26.4	25.8	--	--	--
Army Bens. Better	12.6	15.0	16.3	14.6	--	--	--
Offer GI Bill:							
Army	87.2	85.8	83.6	85.6	--	--	--
USAF	48.9	46.0	43.0	46.0	--		--
Navy	50.1	44.7	43.0	45.9	--	--	
USMC	58.6	52.5	50.9	54.0	--	--	2.06
Min. Duty Tour	37.3	41.6	40.3	39.8	--	--	--
Delayed Entry Allowed	87.1	85.1	82.5	85.0	--	--	--

Note. Percentages are weighted data based on number of respondents presented in parentheses in the table.

Z-Scores are reported for significant quarter-to-quarter comparisons only (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

Table 18

Percentage of Primary Male Analytic Sample Answering Army Reserve and Army National Guard Knowledge Questions Correctly

Knowledge Item	<u>F86</u> (n=524)	<u>W87</u> (n=747)	<u>Sp87</u> (n=811)	<u>SY86/87</u> (n=2082)
17-Year-Olds Eligible	60.2	64.2	64.8	63.1
H.S. Graduation Required	74.8	77.8	77.4	80.2
Scholar Athlete Sponsor	31.8	30.0	30.9	30.9
Ed. Ben. Eligibility	87.3	85.6	83.8	85.6
Max. GI Bill	11.7	8.6	8.8	9.7

Note. Percentages are weighted data based on number of respondents presented in parentheses in the table.

No quarter-to-quarter comparisons were found to be significant (i.e.,  $p < .05 \pm 2.s.e.$ ).



and the USAR. A high level of awareness was also found for the question regarding the requirement for high school graduation (80.2%).

Lower levels of awareness were found for the questions on age eligibility (63.1%), the USAR sponsorship of the Scholar-Athlete Award Program (30.9%), and the maximum amount of money that can be earned by ARNG and USAR recruits through the GI bill (9.7%). Indicators of knowledge regarding USAR and ARNG offers show no significant differences across quarters.

### Media Habits

Table 19 shows the quarterly percentages of PMAS who regularly monitor various types of programs on television and radio. The table shows that media preferences of the PMAS are very stable over time. In line with previous discussions presented in the quarterly ACOMS reports, the most popular television shows for SY86/87 are comedy shows (88.4%), movies (84.1%), and sports (82.4%). The least popular are the drama (42.3%) and mystery programs (58.3%). Among radio programs, the most popular types are rock and roll programs (81.5%), with pop programs a distant second (60%). The least popular programs are classical music programs (16.6%) and talk programs (18.5%).

### Conclusions

This examination of quarterly data for the PMAS reveals remarkable stability for most of the ACOMS indicators. Enlistment intentions, enlistment-related behaviors, and perceptions of the Army all maintained relatively constant levels across quarters. There are a few notable exceptions to this pattern of stability. These quarterly changes bear monitoring over the next quarters, in order to determine the most appropriate interpretation. For example, the decline in enlistment-related actions from W87 to Sp87 could reflect a one time event, a seasonal dip, or the beginning of a long-term trend. Similar questions apply to the F86 to W87 increase in USAR enlistment intentions and the F86 to W87 decline in unaided recall of ROTC advertising.

The finding of overall stability among PMAS responses reported in this chapter should not be overgeneralized to all the subgroups of interest to the Army. It should be noted that the ACOMS Quarterly Reports (Keil et al., 1987) have shown time-related changes on specific indicators among certain subgroups. Some of the later chapters in this report also show initial evidence of differentiable response cycles among certain subgroups. Further analyses will extend the trend analyses of the PMAS to separate examination of the Army's current market segments, e.g., education groups, racial/ethnic groups, recruiting brigades and age groups, and to other segments that may be of interest, e.g., youth who answer probably or probably not to questions on enlistment intentions.

Finally, we note that much of the value of tracking data only becomes evident over time. Serious analysis of seasonality or other cyclic patterns can only be done after a long series of data points

Table 19

## Percentage of PMAS Regularly Viewing or Listening to Various Types of Programming

Type of Program	<u>F86</u>	<u>W87</u>	<u>Sp87</u>	<u>SY86/87</u>
<u>T.V. Shows:</u>				
Sports	81.5	83.1	81.3	82.4
Mystery	57.1	59.4	61.7	58.3
Drama	45.7	41.1	46.5	43.3
Music	68.1	67.0	68.7	67.5
Comedy	86.4	90.1	87.3	88.4
Movie	83.3	84.9	84.5	84.1
Talk	45.9	44.8	40.9	45.3
<u>Radio Programs:</u>				
News	51.9	54.4	55.6	53.1
Classical	17.1	16.2	15.8	16.6
Pop	56.8	63.2	57.9	60.0
Country	33.4	31.9	27.6	32.6
Sports	54.4	47.9	53.2	51.1
Talk	16.2	20.7	18.9	18.5
Rock	81.7	81.2	83.5	81.5
Easy	44.7	42.8	44.1	43.7
<u>Sample Sizes:</u>				
T.V. Shows	327	495	530	1352
Radio Programs	444	622	694	1760

Note. Percentages are weighted data based on number of respondents presented under Sample Sizes in the table.

No quarter-to-quarter comparisons were found to be significant (i.e.,  $p < .05 \pm 2 \text{ s.e.}$ ).

has been established. Thus, any assessment of trends conducted in the early phases of the ACCMS project, whether conducted for the total PMAS or any particular subgroups, must be considered preliminary, and conclusions must continuously be re-evaluated as more data accumulates over time.

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#### 4. BRAND DIFFERENTIATION AMONG ARMY COMPONENTS AND MILITARY SERVICES

Michael J Wilson, Jansen B. Davis, and James B. Greenlees

##### Overview

##### Requirement

To assess the recruiting market image of Army components and how their offers are perceived, and to assess the images of the other military services in order to discover ways in which youth differentiate among the military services and Army components.

##### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS) between October 1986 and June, 1987, youth respondents were asked about their belief that a series of attributes are offered by Army components, other military services, and other career options.

The results presented in this chapter are based upon subsets of the responses of 4,096 16- to 24-year-old males in the Army's primary enlisted recruiting market. The analyses consist of correlational and factor analytic comparisons of youth response patterns.

##### Results

The military image. The Army has a broad and relatively undifferentiated image much like the generalized image that youth have of the military. The Army's image is similar to that of the Army Reserve. The Army is generally perceived positively over a wide range of attributes.

The Army image distinguishes itself from military service by being more closely linked to mental challenge and job opportunities. The Army Reserve image is distinguished from the military service image and the Army image through closer identification with opportunities for training, mental challenge, and civilian career development attributes.

Dual-image services: National Guard, Navy, Marine, and Air Force images. National Guard, Navy, Marine and Air Force images are all composed of two aspects rather than a single, undifferentiated image. The two aspects represent internal and external opportunities believed offered by these services and components. Internal aspects relate to opportunities for self-development, while external aspects relate to environmental opportunities provided by services and components.

The National Guard image distinguishes itself from other service images being identified as an opportunity for part-time work. More than other services, the Navy image seems to stress the opportunity to mature and grow personally. The Marine image is distinguished by a

focus on mental and physical challenge. The Air Force image is distinguished by the relative emphasis on civilian career development and a high-tech environment. While not as undifferentiated as the Army's, the Air Force elicits a wide range of positive perceptions more like the Army than any other service.

### Utilization

This chapter provides Army policymakers and advertising planners with information regarding the image of the Army and Army components relative to other service and career options. This information can inform product positioning policy and facilitate evaluations of the Army's current advertising program.

### Introduction

This report summarizes the brand differentiation analyses conducted for the Army Communications Objectives Measurement System (ACOMS) for the school year 1986/87. The analyses were conducted using seven analytic subsamples drawn from the Primary Male Analytic Sample (PMAS) ranging in size from 346 to 3,863 youth.

The purpose of these analyses is to assess the recruiting market image of the Army and how its offers are perceived. Additionally, these analyses assess the images of the other military service options and Army components in order to determine ways in which youth differentiate among the military services and Army components.

The results from the brand differentiation analyses largely reinforce accepted beliefs regarding the images of the different military services. The Air Force, Navy, Marines, and Army National Guard all have distinctive images which clearly differentiate their respective positions in the recruiting marketplace. The Army and Army Reserve, by contrast, have broad and relatively undifferentiated images. Though perceptions of the Army and Reserve are uniformly positive, they do not single out specific characteristics of Army offers that clearly defines a unique Army image. It is worthy of note, however, that in considering the similarities of military service images, it was found that the Air Force image has more in common with that of the Army than the images for any other military service.

This report begins with a discussion of the analytic samples drawn from the PMAS and the survey data used in the brand differentiation analyses. Next, an overview of the analysis strategy is presented. This overview is followed by a discussion of the major results from the brand differentiation analysis. The report ends with a discussion of the utility of findings and suggestions for future brand differentiation analyses.

### Data and Analytic Samples

The brand differentiation analyses presented in this report were performed on seven subsamples drawn from the Primary Male Analytic Sample (PMAS) interviewed during the first three quarters of ACOMS data collection (October 13, 1986 through June 30, 1987). The PMAS itself is a subset of youth interviewed for ACOMS. It is defined as consisting of males in the 48 contiguous United States between the ages of 16 and 24 who have not served nor been accepted for service in the military, who are either in high school or have a regular high school diploma, who have never taken a college Reserve Officers' Training Corps (ROTC) course and who have not yet completed their sophomore year in college. The seven subsamples analyzed in this report correspond to PMAS youth questioned regarding their perceptions of: (a) the Army, (b) Army Reserve, (c) Army National Guard, (d) Navy, (e) Marines, (f) Air Force, and (g) the military generally.

### Measures

ACOMS respondents were asked whether they agreed that enlistment in one or more of the military services (or the military generally) would make available certain opportunities identified as important attributes in Army advertising. Due to the fact that ACOMS ROTC perceptions questions qualitatively differed from those asked for the other military service options, ROTC perceptions were excluded from brand differentiation analyses. Also excluded were perceptions questions regarding the civilian options of college attendance and full-time employment. Our concern here is to consider the relative images of military, not civilian, opportunities. For each question, youth were asked to respond, using a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree), the degree to which they agreed that the military service referred to actually offered such opportunities. Respondents were asked whether they agreed that.

The (referenced military service) offers...

- (1) A wide variety of opportunities to find a job you can enjoy?
- (2) A physically challenging environment?
- (3) An experience you can be proud of?
- (4) An advantage over going right from high school to college (a stepping stone between high school and college)?
- (5) An opportunity to develop leadership skills?
- (6) The chance to work with the latest high tech equipment?
- (7) A great value in your civilian career development?
- (8) An excellent opportunity to develop self-confidence?

- (9) The opportunity to develop your potential?
- (10) Many chances to work with highly trained people?
- (11) A mentally challenging experience?
- (12) An opportunity to become more mature and responsible?
- (13) Many opportunities for training in useful skill areas?
- (14) An excellent opportunity to obtain money for college or vocational school?
- (15) An opportunity to serve America while living in your own hometown?
- (16) Interesting and exciting weekends?

As a grouping of perceptions American male youth have regarding enlistment opportunities in the Army, Army Reserve, Army National Guard, Navy, Marines, Air Force, and military service generally, the ACOMS perceptions questions are considered reasonable indicators of the images youth have of these military services. The images being analyzed and which are used to differentiate among the services, then, are images of the perceived opportunity structures of the various military services.

For analysis purposes, the sixteen perceptions questions are divided into two groups depending upon the particular military service image being analyzed. When the referent service is the Army, Navy, Marines, Air Force, or the military generally, respondents were asked to state their perceptions with regard to the first fourteen items in the list presented above. When the Army National Guard or the Army Reserve are the referenced services, however, questions about physical challenge (2), advantages over going right from high school to college (4), and working with high-tech equipment (6) are excluded and the last two questions in the list (serve in community and exciting weekends) added. These alternative lists of attributes were constructed to reflect characteristics of National Guard and Reserve service.

#### Analytic Samples

The ACOMS perceptions module implements a question allocation schedule which assigns any particular respondent only a subset of all possible perceptions questions. Generally, respondents are asked their perceptions of Army opportunities as well as those for one or two additional referents. For college freshmen and sophomores, however, question allocation is more complex. In this group, approximately one-third are asked their perceptions of Army and ROTC opportunities, one-third about ROTC and a second (not Army) service's opportunities, and the final third are asked their perceptions of Army and a second (not ROTC) service's opportunities.



As a result of perceptions module question allocations, the analysis of perceptions for all military service options (less ROTC) requires the formation of seven PMAS subsamples--one for each service option. Tables 20 and 21 document the effects of excluding ROTC from the brand differentiation analysis and present the sample sizes for each of the seven analytic samples.

Table 20

Comparison of Primary Male Analytic Sample (PMAS) and Army Analytic Samples by Education Group

Education Group	PMAS Unweighted		Analytic Sample Unweighted	
	N	%	N	%
College Freshmen and Sophomores	771	18.8	538	13.9
HS College-Oriented	1,574	38.5	1,574	40.8
HS Work-Oriented	419	10.2	419	10.8
W/Diploma not Currently Enrolled	1,332	32.5	1,332	34.5
Total	4,096	100.0	3,863	100.0

As Table 20 shows, since the allocation of ROTC questions is a function of educational group and we have excluded these from the analyses, the Army referent subsample exhibits a corresponding decrease in college freshmen and sophomores. This exclusion rule effectively drops 233 individuals from the PMAS in the analysis of Army perceptions (i.e., individuals not asked their perceptions of Army opportunities). As a result, findings from these analyses cannot strictly be considered representative of all PMAS youth. While in the present analysis this is not believed to constitute a great difficulty as, for the most part, inferential statistical tests are not performed, future analyses will incorporate weighting adjustments to compensate for this lack of representativeness.

More dramatic differences in analytic sample sizes are encountered in the case of all military service analytic samples other than the Army. As Table 21 documents, perceptions module allocations schedules restrict the collection of perceptions data to approximately one-tenth or one-sixth of the Army perceptions analytic sample depending on the military service referent.

Table 21

## Unweighted Analytic Sample Sizes by Military Service

Military Service	Unweighted Analytic Sample Size
Army	3,863
Military	360
Army Reserve	638
Army National Guard	609
Navy	346
Marines	372
Air Force	357

Based upon allocation schedules agreed upon during the design of ACOMS, these sample sizes reflect relative sample estimation precision requirements given constraints on survey length imposed by respondent burden considerations. Two characteristics of these analytic samples should be noted. First, each is large enough to warrant the statistical analyses undertaken for brand differentiation investigations. Second, except in the case of the Army analytic sample which overlaps all others analyzed, no analytic sample intersects any other. That is, in no case were respondents asked, for example, their perceptions regarding both the Army Reserve and the Air Force or the Navy and the Marines.

#### Methods

The analyses presented in this report were designed to identify and model the perceptual images held by youth of opportunities offered by the Army, Army Reserve, Army National Guard, Navy, Marines, Air Force, and the military in general. With the quantification of these images, it becomes possible to locate those areas where different services overlap in respective images and where services maintain a distinctive marketplace position vis-a-vis perceived opportunities.

In order to model images underlying observed perceptions of military service opportunities, a factor analytic strategy was adopted. Implementation of this strategy required a three-stage process including: (a) an initial inspection of the correlational structure of the perceptions variables within each Army component and other military services, (b) factor analysis of perceptions responses for each of the seven analytic samples, and (c) construction of factor scales. All analyses presented in this report were conducted using weighted survey data.

Prior to the initiation of the factor analyses, correlations were computed among all perceptions questions within each of the seven analytic subsamples. The resulting correlations were inspected to determine patterns and magnitudes of associations among perceptions variables which might prove useful in explaining subsequent factor analysis findings.

Following the preparation and examination correlation matrices, seven maximum likelihood factor analyses were performed on the perceptions questions (where multiple factors were extracted, the varimax method of rotation was used). These separate analyses established the factor/image structures underlying perceptions of each Army component and other military services. For the Army, Army Reserve, and military a single, relatively undifferentiated, image was identified as underlying perceptions of opportunities. In the case of the remaining military service options, the modeling of observed perceptions required the formation of two distinct factors or image aspects for each service option. In the interpretation of the factor loadings for each of these complex, multi-aspect/image services, it was found that each was described as possessing a distinctive opportunity structure by ACOMS respondents.

Once the image structure for each Army component and other military service was established, factor scales for each service-specific image or image-aspect were constructed. The algorithm used for computation of factor scales is

$$FS_i = S_{1i} * P_1 + S_{2i} * P_{2i} + \dots + S_{ni} * P_{ni}$$

where, for each respondent,

- $FS_i$  = his scale value for the  $i^{th}$  military service option,
- $S_{1i}$  = the factor score for the first perceptions variable for the  $i^{th}$  military service option, and
- $P_{2i}$  = his response to the first perceptions question for the  $i^{th}$  military service option.

In the analyses presented in this report the Army factor scale was then correlated with all others. While the correlations between the Army and other factor scales are generally quite strong, the pattern of correlation magnitudes serve to reinforce the interpretations of relative similarity and dissimilarities arrived at during the interpretation of factor loadings.

### Results

The brand differentiation factor analyses produced results indicating two distinct modalities in the imaging of the military services. For one group of military services (Army, Army Reserve, and the military) we obtained a broad, relatively undifferentiated positive collective image. Only marginal (but nonetheless interpretable)

distinctions appear to differentiate the services in this group. For the Army National Guard, Navy, Marines, and Air Force a second type of image emerged. In this group complex, dual-facet images are found for each service. Each service's image has a primary aspect which predominates perceptions of opportunities offered by the service but each has as well a clear secondary aspect that contributes to the overall perceptual image of the service. Considered on a one-by-one basis, the multiple aspect images that youth have of the National Guard, Navy, Marines, and Air Force distinguish each clearly from not only the first group of services, but from one another as well.

Before entering into a discussion the brand differentiation results, we will briefly overview findings from the correlational analysis and state the guidelines followed during the interpretation of factor analysis results.

### Correlational Analysis

The correlations presented in the Appendix provide an indication of the cohesiveness of the perceptions questions as a group. Though the Appendix is quite large, a careful study of the correlations among perceptions items both within and across each service referent leads to the conclusions that, as a group, the perceptions questions are highly interrelated.

In this correlation matrix (disregarding distinctions of service referent), for example, all but four perceptions questions have Pearson product-moment correlations of .5 or greater in 45% or more of their cell entries. This general high level of association among perceptions responses is maintained when the focus shifts to correlations by military service referent as well.

The only perception responses not exhibiting a consistently strong association with other perceptions are those for the questions relating to Physical Challenge, Money for College or Training, Stepping Stone Between High School and College, and Chance to Serve in Hometown. Of the correlations reported for these variables, only 27.7%, 7.1%, 4.6%, and 4.2%, respectively, exceeded the .5 value. The inspection of correlations among perceptions variables yields, with a few exceptions, indications that the questions asked by ACOMS form a cohesive group of perceptions.

### Guidelines for the Interpretation of Factor Analysis Results

The factors or images constructed in these analyses are understood as compositions or constructions which are given substantive meaning by the variables having high loadings on the factor. This is reasonable as factor loadings represent the correlation between the observed variable and the underlying factor or image. As to what constitutes a substantive contribution to the factor or military service image, we have adopted the convention that only loadings greater than .6 are considered to materially contribute to image. (Tables 23 through 27 are sorted by this factor loading criterion.)

In addition, questions with moderate loadings on two factors (i.e., greater than .5) are considered to bridge the two images and, as such, provide an indication as to the relationship between the two images. Finally, perceptions questions not loading highly on one factor or moderately on both are considered noise variables. These are questions that prove to be outliers. They do not help define the particular service's image.

With these comments made regarding the general interpretive rules followed in the study of the factor analysis results, we will move on to a consideration of the findings for the single- and dual-image military services.

#### Army, Reserve, and Military Images

Tables 22, 23, and 24 present the factor loadings estimated for Army, military, and the Army Reserve, respectively. In reviewing these tables, the factor loadings and the ordering of perceptions variables present a general impression of similarity. Nearly all loadings exceed .6 and variables strongly contributing to the image of one service generally contribute strongly to other service images. Conversely, variables only slightly, if at all, contributing to one service's image tend to have the same low level of contribution for the others.

The collective image which emerges for the Army, military, and Reserve is broad and undifferentiated. These services are perceived very positively, generally, over a wide range of attributes that include both internal and external referents. For example, each service image is defined as providing opportunities for the development of self-potential. This is an internal referent in the sense of signifying a quality developed by the individual. Also defining the Army, military, and Reserve's images are references to external opportunities such as skill training which are provided by the environment of military service. This positive and undifferentiated image of collective opportunities in these services is underscored by their average factor loadings. The average loadings for the Army, military, and Reserve are .713, .707, and .696, respectively.

Table 22

## Factor Loadings of Army Brand Image\*

Perceptions question	Army Factor Loadings
Develop potential	.809
Develop self-confidence	.788
Develop leadership skills	.764
Experience to be proud of	.759
Work with highly qualified people	.752
Useful skill training	.750
Opportunity to become more mature	.748
Mentally challenging	.730
Opportunity to find job	.711
Value to civilian career	.707
Work with high-tech equipment	.687
Physically challenging	.625
Obtain money for school or training	.603
Stepping stone between hs and college	.546
Eigenvalue	15.493

\*Maximum likelihood solution.

Table 23

## Factor Loadings of Military Brand Image\*

Perceptions Question	Military Factor Loadings
Develop potential	.827
Develop self-confidence	.813
Useful skill training	.783
Experience to be proud of	.777
Develop leadership skills	.766
Opportunity to become more mature	.760
Work with highly qualified people	.754
Value to civilian career	.726
Work with high-tech equipment	.695
Opportunity to find job	.670
Mentally challenging	.634
Physically challenging	.604
Stepping stone between hs and college	.563
Obtain money for school or training	.525
Eigenvalue	17.128

\*Maximum likelihood solution.

Table 24

## Factor Loadings of Army Reserve Brand Image\*

Perceptions question	Army Reserve Factor Loadings
Develop potential	.792
Useful skill training	.771
Experience to be proud of	.752
Mentally challenging	.748
Develop leadership skills	.742
Opportunity to become more mature	.742
Work with highly qualified people	.730
Value to civilian career	.716
Develop self-confidence	.712
Opportunity to find job	.689
**Exciting weekends	.657
Obtain money for school or training	.525
**Chance to serve in hometown	.477
Eigenvalue	13.766

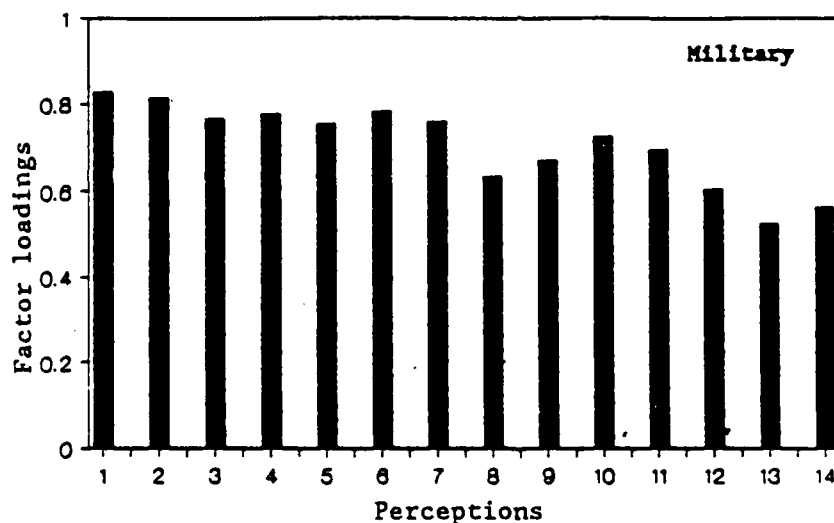
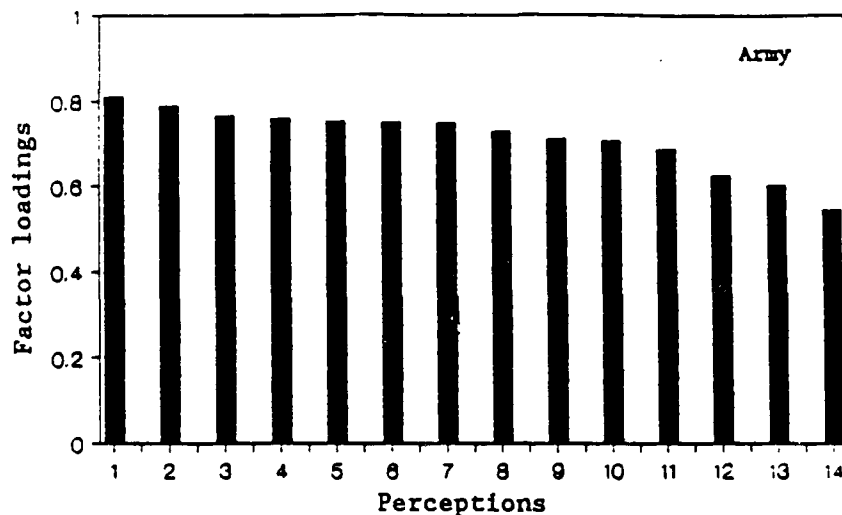
\*Maximum likelihood solution.

\*\*Perceptions asked only for Army Reserve and National Guard

It is not the case, however, that the images of these three services are identical. Figures 13 and 14 exhibit generally high factor loadings and the Army and military figures do display what might be termed a general trend of decrease in the magnitude of factor loads as we progress from left to right. Factor loadings in these figures are sorted to reproduce the ordering of perceptions used for Army in Table 22. For the Reserve figure, additional perceptions not asked of Army respondents appear at the far right of the chart. In comparing the Army and military images, for example, we see that mental challenge and wide job opportunities contribute less to the military image than they do to that for the Army. Also, the Army Reserve image distinguishes itself from the Army by containing a stronger emphasis on opportunities for training, mental challenge, and civilian career benefits.

#### National Guard, Navy, Marine, and Air Force Images

For the National Guard, Navy, Marines, and Air Force, complex dual-aspect images of opportunity structures emerged during the brand differentiation analyses. At the most abstract level, the primary and secondary aspects of the images can be interpreted as representing internal and external opportunities believed offered by these military services. Internal or personal aspects of image included opportunities for self-development, maturity, and the growth of self-confidence. External or environmental aspects included skill



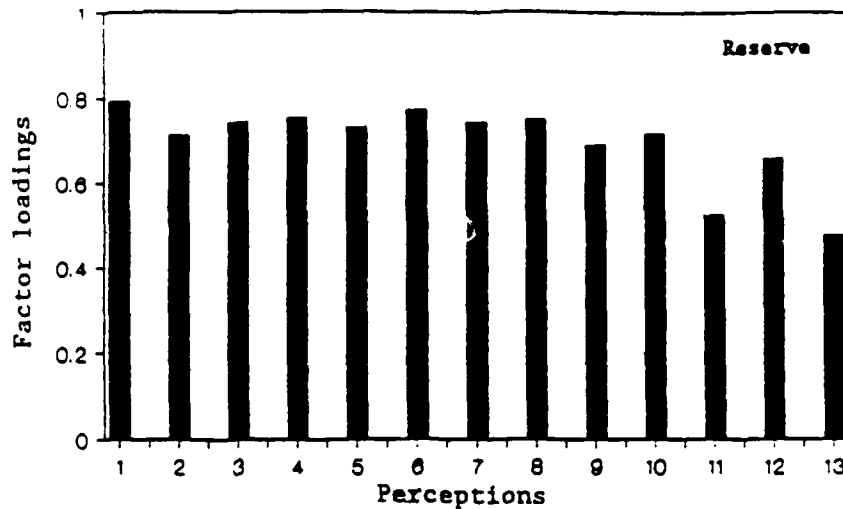
**Key:**

- |                                      |   |
|--------------------------------------|---|
| 1. Develop Potential                 | 8. Mentally Challenging                 |
| 2. Develop Self-Confidence           | 9. Opportunity to Find a Job            |
| 3. Develop Leadership Skills         | 10. Value to Civilian Career            |
| 4. Proud Experience                  | 11. Work with High-Tech Equipment       |
| 5. Work with High Quality People     | 12. Physically Challenging              |
| 6. Useful Skill Training             | 13. Obtain Money for School or Training |
| 7. Opportunity to Become More Mature | 14. Step Between HS and College         |

Note. Perceptions are presented in order of Army perceptions ranking.

Figure 13. Army and military perceptions factor loadings.





**Key:**

- |                                      |   |
|--------------------------------------|---|
| 1. Develop Potential                 | 8. Mentally Challenging                 |
| 2. Develop Self-Confidence           | 9. Opportunity to Find a Job            |
| 3. Develop Leadership Skills         | 10. Value to Civilian Career            |
| 4. Proud Experience                  | 11. Obtain Money for School or Training |
| 5. Work with High Quality People     | 12. Exciting Weekends                   |
| 6. Useful Skill Training             | 13. Chance to Serve in Hometown         |
| 7. Opportunity to Become More Mature |   |

**Note.** Perceptions are presented in order of Army perceptions ranking.

**Figure 14.** Army Reserve perceptions factor loadings.

training, the opportunity to work with high-tech equipment, and other opportunities characterized as something provided externally by military service. The images of these services, therefore, are a complex blend of distinguishable beliefs about personal development that may be realized through military service and opportunities provided as a consequence of the service environment.

National Guard images. Careful examination of Table 25 shows that the Army National Guard distinguishes itself from the other military services primarily as an opportunity for moonlighting. As Figure 15 emphasizes, both the primary and secondary aspects of the National Guard image are fairly distinct. The primary aspect stresses self-development. Development of leadership skills, potential, self-confidence, and opportunities for training all define this aspect. This primary emphasis on self-development is broadly in agreement with findings for most other services.

Table 25

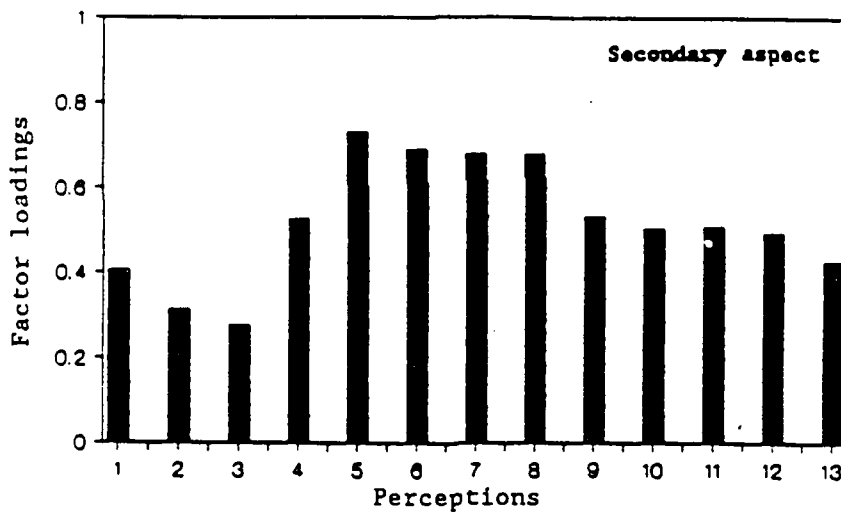
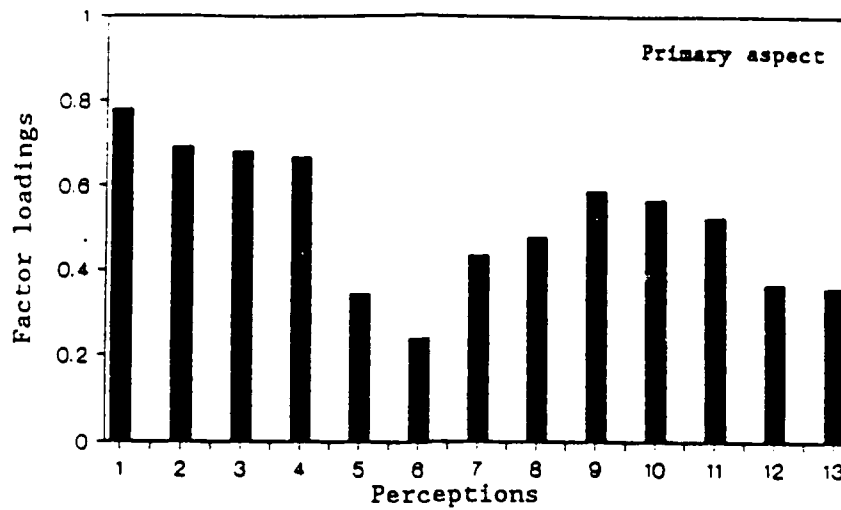
Factor Loadings of National Guard Primary and Secondary Brand Images\*

Perceptions Question	<u>National Guard Factor Loadings</u>	
	Primary Aspects	Secondary Aspects
Develop potential	0.779	0.405
Develop leadership skills	0.692	0.313
Useful skill training	0.681	0.275
Develop self-confidence	0.668	0.525
Opportunity to find job	0.343	0.731
**Exciting weekends	0.240	0.690
Experience to be proud of	0.434	0.679
Value to civilian career	0.479	0.678
Opportunity to become more mature	0.588	0.532
Mentally challenging	0.567	0.503
Work with highly qualified people	0.527	0.508
Obtain money for school or training	0.368	0.493
**Chance to serve in hometown	0.361	0.427
Eigenvalues	17.816	1.032

\*Maximum likelihood solution, varimax rotation.

\*\*Perceptions asked only for Army Reserve and National Guard.

It is in the secondary aspect of image that the National Guard is most clearly distinguished from the other services. Here opportunities for jobs, civilian career development, and weekend service define a service perceived as augmenting or supplemental to civilian life.



**Key:**

- |                              |   |
|------------------------------|---|
| 1. Develop Potential         | 8. Value to Civilian Career             |
| 2. Develop Leadership Skills | 9. Opportunity to Become More Mature    |
| 3. Useful Skill Training     | 10. Mentally Challenging                |
| 4. Develop Self-Confidence   | 11. Work with Highly Qualified People   |
| 5. Opportunity to Find Job   | 12. Obtain Money for School or Training |
| 6. Exciting Weekends         | 13. Chance to Serve in Hometown         |
| 7. Proud Experience          |   |

Figure 15. Army National Guard perceptions factor loadings.

In this way, the Guard's image is in agreement with the terms of service youth may expect upon enlistment.

The Navy images. The configuration of Navy primary and secondary image aspects is different than those found for any other military service (Table 26). For the Navy, the primary emphasis concerns training, service environment, and civilian career issues. The major image of the Navy, then focuses not upon internal self-development issues (as do all other services), but more instrumental, externally provided qualities of service. The primary message believed about the Navy is that it is a great place to learn those skills that will be useful in civilian life.

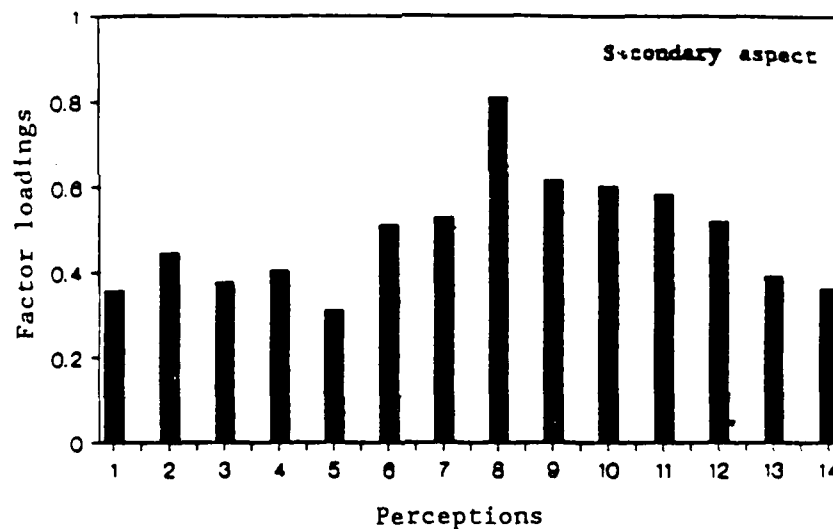
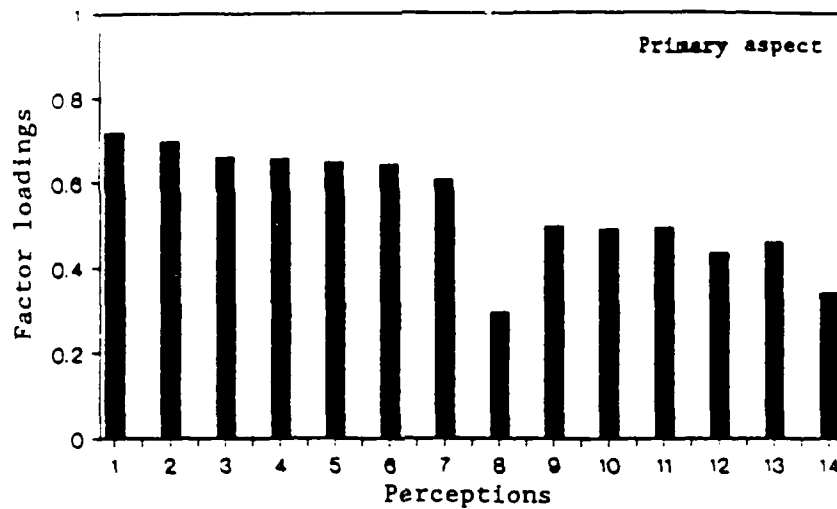
Table 26

Factor Loadings of Navy Primary and Secondary Brand Images\*

Perceptions Question	<u>Navy Factor Loadings</u>	
	Primary Aspects	Secondary Aspects
Work with highly qualified people	0.717	0.358
Useful skill training	0.696	0.445
Value to civilian career	0.658	0.376
Opportunity to find job	0.657	0.405
Work with high-tech equipment	0.650	0.311
Develop potential	0.643	0.512
Develop leadership skills	0.607	0.528
Opportunity to become more mature	0.294	0.810
Experience to be proud of	0.494	0.615
Mentally challenging	0.489	0.601
Develop self-confidence	0.495	0.582
Physically challenging	0.435	0.519
Obtain money for school or training	0.461	0.390
Stepping stone between hs and college	0.343	0.362
Eigenvalues	19.810	1.145

\*Maximum likelihood solution, varimax rotation.

As Figure 16 illustrates, the secondary aspect of Navy image is very sharply defined as stressing the opportunity to mature. In addition to being perceived as a service that provides transferable skills, the Navy is also seen as a place to grow up. This figure also shows that physical challenge and the development of self-confidence more or less provide a bridge between the primary and secondary images. These attributes underscore both the perceived context of



**Key:**

- |                                      |   |
|--------------------------------------|---|
| 1. Work with Highly Qualified People | 8. Opportunity to Become More Mature    |
| 2. Useful Skill Training             | 9. Proud Experience                     |
| 3. Value to Civilian Career          | 10. Mentally Challenging                |
| 4. Opportunity to Find Job           | 11. Develop Self-Confidence             |
| 5. Work with High-Tech Equipment     | 12. Physically Challenging              |
| 6. Develop Potential                 | 13. Obtain Money for School or Training |
| 7. Develop Leadership Skills         | 14. Step Between HS and College         |

Figure 16. Navy perceptions factor loadings.

Navy service (physically challenging environment) and the personal development it yields (self-confidence).

The Marine images. As a military service option, the image of the Marines distinguishes itself from others in expected ways. Basically, the Marines are seen as offering opportunities for self-development and challenge. Unlike any other service option, the primary aspect of Marine image includes among its defining perceptions both mental and physical challenges (see Table 27). Emphasis in the Marine image on challenge corresponds to the messages American youth receive through advertising regarding the characteristics of Marine service.

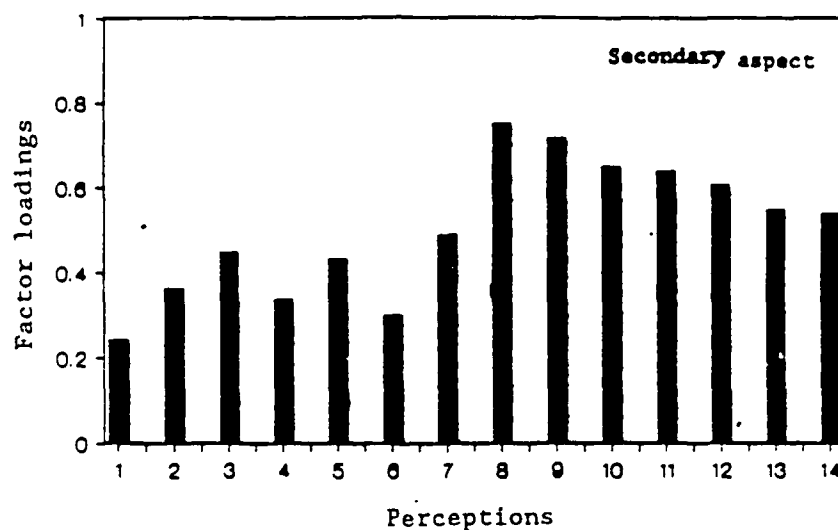
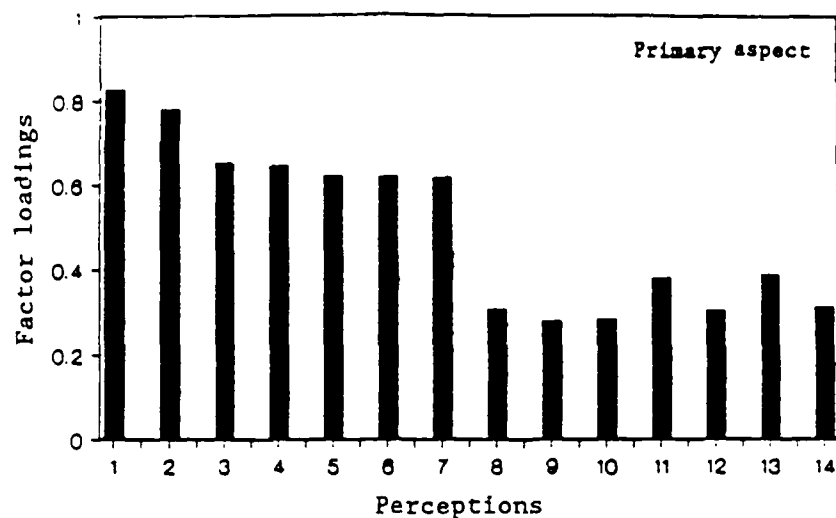
Table 27

Factor Loadings of Marine Primary and Secondary Brand Images\*

Perceptions Question	<u>Marine Factor Loadings</u>	
	Primary Aspects	Secondary Aspects
Develop self-confidence	0.824	0.241
Develop potential	0.777	0.363
Develop leadership skills	0.650	0.449
Opportunity to become more mature	0.644	0.337
Experience to be proud of	0.620	0.433
Physically challenging	0.618	0.300
Mentally challenging	0.617	0.490
Work with highly qualified people	0.305	0.750
Useful skill training	0.277	0.716
Opportunity to find job	0.282	0.650
Work with high-tech equipment	0.379	0.640
Obtain money for school or training	0.302	0.608
Value to civilian career	0.386	0.550
Stepping stone between hs and college	0.311	0.540
Eigenvalues	16.757	1.781

\*Maximum likelihood solution, varimax rotation.

The secondary aspect of the Marine image stresses the environment of service and implies civilian transferability. In this second facet, as seen in Figure 17, quality of people, training opportunities, and wide job opportunities combined with a perception of eventual educational benefits (a perception not held in any other service image) indicate that youth see the Marines as not a life-long commitment. Rather, the perception of training and educational benefits as partially defining the Marine image point to a longer-term perspective



Key:

- |                                      |   |
|--------------------------------------|---|
| 1. Develop Self-Confidence           | 8. Work with Highly Qualified People    |
| 2. Develop Potential                 | 9. Useful Skill Training                |
| 3. Develop Leadership Skills         | 10. Opportunity to Find Job             |
| 4. Opportunity to Become More Mature | 11. Work with High-Tech Equipment       |
| 5. Proud Experience                  | 12. Obtain Money for School or Training |
| 6. Physically Challenging            | 13. Value to Civilian Career            |
| 7. Mentally Challenging              | 14. Step Between HS and College         |

Figure 17. Marine perceptions factor loadings.

on what Marine service may provide for eventual civilian life. Interestingly, though, the benefits the Marine image holds for civilian life are not explicitly economic in nature. The Marines are not considered a particularly good avenue of civilian career development.

The Air Force images. Air Force service, in contrast to the Marines, is viewed as an opportunity to enhance a civilian career. The primary aspect of image is strongly defined as personal self-development. In addition to internal development, though, the Air Force image includes job and career development. Table 28 and Figure 18 show that the Air Force primary image is very broad and positive. While not as undifferentiated as the Army's, the Air Force, nonetheless, elicits a wide range of positive perceptions more like the Army than any other complex-image service.

Table 28

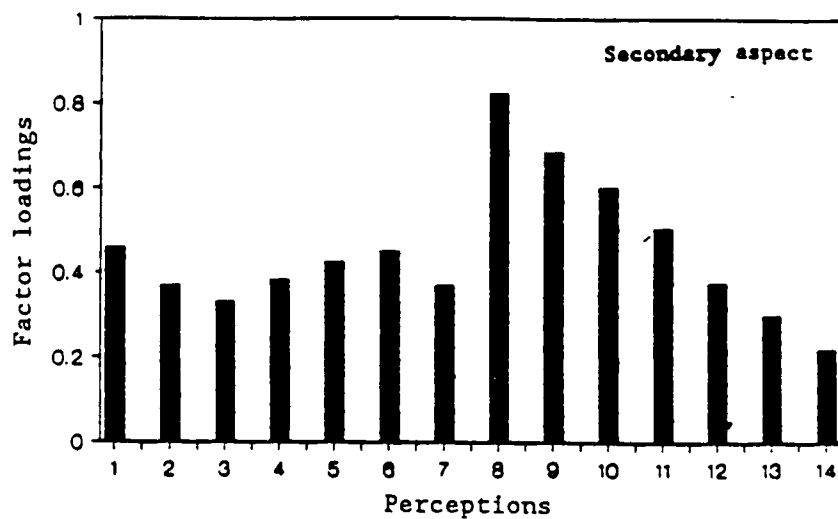
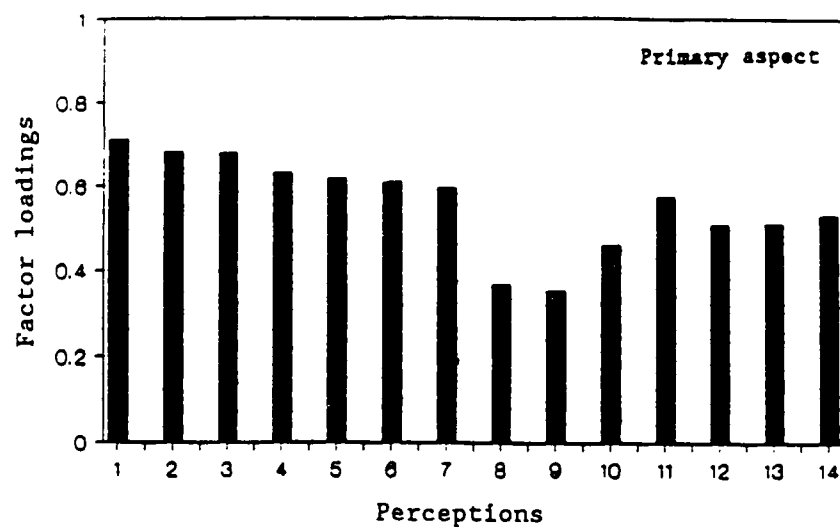
Factor Loadings of Air Force Primary and Secondary Brand Images\*

Perceptions Question	<u>Air Force Factor Loadings</u>	
	Primary Aspects	Secondary Aspects
Develop potential	0.710	0.458
Develop self-confidence	0.680	0.369
Value to civilian career	0.679	0.331
Mentally challenging	0.635	0.383
Opportunity to become more mature	0.624	0.425
Develop leadership skills	0.614	0.450
Opportunity to find job	0.600	0.369
Work with highly qualified people	0.372	0.822
Work with high-tech equipment	0.358	0.684
Useful skill training	0.465	0.600
Experience to be proud of	0.580	0.504
Obtain money for school or training	0.513	0.377
Physically challenging	0.518	0.301
Stepping stone between hs and college	0.538	0.221
Eigenvalues	19.255	1.375

\*Maximum likelihood solution, varimax rotation.

It is in the secondary aspect of the Air Force image that its greatest differentiation from other services occurs. Here the high-tech image of the Air Force clearly emerges. The clear and distinct secondary image for the Air Force shows it to have a very well-defined market position in the minds of American male youth. In terms of sharpness of definition, only the Navy's secondary image as a place to grow up equals the Air Force's market position as a precise locator.





Key:

- |                                      |   |
|--------------------------------------|---|
| 1. Develop Potential                 | 8. Work with Highly Qualified People    |
| 2. Develop Self-Confidence           | 9. Work with High-Tech Equipment        |
| 3. Value to Civilian Career          | 10. Useful Skill Training               |
| 4. Mentally Challenging              | 11. Proud Experience                    |
| 5. Opportunity to Become More Mature | 12. Obtain Money for School or Training |
| 6. Develop Leadership Skills         | 13. Physically Challenging              |
| 7. Opportunity to Find Job           | 14. Step Between HS and College         |

Figure 18. Air Force perceptions factor loadings.

### Factor Scale Correlations

Table 29 displays the correlations between the Army factor scale and the scales for Army components and other services. The magnitude of reported correlations reflect the degree to which the images (as reflected by factor scales) of the components and services are like that for the Army. The range and pattern of correlations in this table reinforce conclusions drawn from the analysis of factor loadings.

Table 29

Correlations of Army Factor Scale with Other Service and Army Components Factor Scales

Army Component/Military Service	Correlation with Army Factor Scale
Military	.917
Army Reserve	.849
Army National Guard	
Primary Image	.657
Secondary Image	.722
Air Force	
Primary Image	.752
Secondary Image	.614
Navy	
Primary Image	.641
Secondary Image	.667
Marines	
Primary Image	.589
Secondary Image	.609

The correspondence between the Army scale and those for the military and Army Reserves is very strong. Despite differences in image composition noted during the analysis of factor loadings, it is fair to say that these differences are marginal when compared to what is common among these military service referents.

It is interesting to note that the service having the next highest correlation with the Army factor scale is the Air Force. This confirms the earlier conclusion that the Air Force's primary image has characteristics similar in many respects to the Army's image (i.e.,

strong, positive, and relatively broad-based). As is expected, the Marine and Navy factor scales correlate less strongly with the Army scale than any other Army component or military service.

### Conclusion

This report has summarized the ACOMS brand differentiation analyses performed on seven analytic subsamples drawn from the Primary Male Analytic Sample (PMAS). These analyses were conducted to assess the recruiting market image of the Army both in relation to its components and the other military services.

The brand differentiation results generally conform to expectations. The Air Force, Navy, Marines, and Army National Guard were all found to have clearly distinctive images which differentiate their respective positions in the recruiting marketplace. In contrast, the Army and Army Reserve exhibited broad and relatively undifferentiated images. Though perceived positively across a wide range of attributes, perceptions of the Army and Army Reserve do not have distinctive images of the type observed for the other military services.

Beyond providing clear, quantitative summaries of the brand images of the Army, its components, and other military services, this research provides a baseline measurement of the recruiting marketplace as perceived by youth. Future analyses may use this baseline to track changes in Army, Army component, or other military service's images. Such tracking may prove useful, for example, in monitoring the effects of specific advertising campaigns designed to emphasize particular characteristics of one of the military services. Additionally, tracking over time can reveal ways in which services are becoming perceived as either more and more alike or, conversely, the ways in which a service is establishing a distinctive image.

Future analyses should also extend the scope of the brand differentiation analyses in order to: (a) increase the usefulness of findings, and (b) incorporate findings from the market segmentation analyses. Presently, we are able to directly analyze only the relationship between the Army's and other service images. Correlations cannot be computed, for example, between the Navy and Air Force images. Future research must provide this capability. When developed, this capacity for direct cross-service analysis will yield more useful information than is presently available. It will be possible, for example, more accurately determine the market images of all services and track their simultaneous changes over time.

Future analyses should also consider the segmentation of brand differentiation analyses in order to better understand the image of the Army within its various recruiting markets. To the degree that different images are held in these markets, it may be feasible to more directly target advertising messages in order to maximize their effectiveness. The adoption of market segmentation strategies within the brand differentiation analyses may also point to new and useful market

segmentations. In sum, while these initial brand differentiation analyses have provided a considerable body of information, there are many ways in which the usefulness of this research may be extended.

# APPENDIX

## Correlations of Perception Items: All Service Referents

	Military Service Referent	Wide Variety of Jobs	Physical Challenge	Proud Experience	Stepping Stone	Develop Leadership
Physical Challenge	Army	0.404				
	Military	0.340				
	Reserve	*				
	National Guard	*				
	Navy	0.513				
	Marine	0.359				
	Air Force	0.433				
Proud Experience	Army	0.528	0.537			
	Military	0.499	0.580			
	Reserve	0.532				
	National Guard	0.623				
	Navy	0.599	0.576			
	Marine	0.540	0.518			
	Air Force	0.497	0.527			
Stepping Stone	Army	0.459	0.264	0.441		
	Military	0.550	0.305	0.443		
	Reserve					
	National Guard					
	Navy	0.427	0.249	0.404		
	Marine	0.511	0.237	0.493		
	Air Force	0.439	0.373	0.424		

\*Blank entries signify that pair of perception items were not asked for the service referent.

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Wide Variety of Jobs	Physical Challenge	Proud Experience	Stepping Stone	Develop Leadership
Develop Leadership	Army	0.527	0.526	0.582	0.442	
	Military	0.504	0.531	0.671	0.458	
	Reserve	0.523		0.593		
	National Guard	0.479		0.518		
	Navy	0.580	0.588	0.618	0.372	
	Marine	0.427	0.556	0.555	0.468	
	Air Force	0.540	0.414	0.598	0.391	
Hi-Tech Opportunity	Army	0.484	0.438	0.509	0.348	0.540
	Military	0.426	0.421	0.533	0.308	0.529
	Reserve					
	National Guard					
	Navy	0.524	0.489	0.503	0.257	0.576
	Marine	0.458	0.422	0.490	0.451	0.570
	Air Force	0.456	0.366	0.555	0.294	0.549
Civilian Career	Army	0.554	0.378	0.553	0.470	0.521
	Military	0.517	0.352	0.581	0.512	0.571
	Reserve	0.536		0.511		0.549
	National Guard	0.685		0.664		0.541
	Navy	0.628	0.425	0.557	0.447	0.580
	Marine	0.517	0.289	0.502	0.460	0.473
	Air Force	0.586	0.447	0.515	0.442	0.596

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Wide Variety of Jobs	Physical Challenge	Proud Experience	Stepping Stone	Develop Leadership
Develop Self- Confidence	Army	0.515	0.505	0.630	0.386	0.611
	Military	0.501	0.493	0.627	0.447	0.616
	Reserve	0.435		0.566		0.527
	National Guard	0.616		0.640		0.612
	Navy	0.582	0.490	0.603	0.412	0.618
	Marine	0.425	0.575	0.613	0.370	0.628
	Air Force	0.467	0.465	0.614	0.401	0.607
Develop Potential	Army	0.559	0.484	0.608	0.441	0.625
	Military	0.532	0.494	0.602	0.411	0.598
	Reserve	0.545		0.597		0.607
	National Guard	0.570		0.599		0.664
	Navy	0.600	0.517	0.599	0.374	0.692
	Marine	0.457	0.510	0.618	0.435	0.655
	Air Force	0.562	0.469	0.612	0.476	0.621
Mental Challenge	Army	0.525	0.472	0.519	0.417	0.556
	Military	0.410	0.359	0.425	0.328	0.434
	Reserve	0.514		0.589		0.556
	National Guard	0.550		0.610		0.535
	Navy	0.586	0.597	0.603	0.311	0.606
	Marine	0.456	0.497	0.544	0.457	0.633
	Air Force	0.500	0.412	0.574	0.459	0.559

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Wide Variety of Jobs	Physical Challenge	Proud Experience	Stepping Stone	Develop Leadership
Become More Mature	Army	0.507	0.486	0.590	0.384	0.582
	Military	0.467	0.456	0.572	0.366	0.585
	Reserve	0.493		0.580		0.618
	National Guard	0.551		0.622		0.590
	Navy	0.498	0.521	0.642	0.415	0.596
	Marine	0.368	0.504	0.552	0.442	0.534
	Air Force	0.490	0.469	0.575	0.448	0.545
Obtain Skill Training	Army	0.583	0.452	0.532	0.419	0.552
	Military	0.584	0.426	0.626	0.416	0.568
	Reserve	0.606		0.565		0.557
	National Guard	0.447		0.475		0.613
	Navy	0.629	0.522	0.640	0.413	0.656
	Marine	0.590	0.389	0.425	0.434	0.515
	Air Force	0.535	0.403	0.532	0.384	0.529
Work with High Quality People	Army	0.565	0.474	0.544	0.386	0.577
	Military	0.517	0.452	0.571	0.437	0.596
	Reserve	0.484		0.503		0.533
	National Guard	0.543		0.612		0.477
	Navy	0.602	0.473	0.562	0.351	0.610
	Marine	0.542	0.400	0.475	0.481	0.485
	Air Force	0.533	0.424	0.609	0.417	0.582



Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Wide Variety of Jobs	Physical Challenge	Proud Experience	Stepping Stone	Develop Leadership
Cash for Education	Army	0.479	0.449	0.447	0.370	0.465
	Military Reserve	0.513	0.388	0.366	0.417	0.346
	National Guard	0.393		0.355		0.432
	Navy	0.543		0.454		0.430
	Marine	0.519	0.418	0.468	0.419	0.514
	Air Force	0.531	0.415	0.457	0.364	0.496
		0.495	0.334	0.457	0.384	0.496
Exciting Weekends	Army					
	Military Reserve	0.524		0.592		0.462
	National Guard	0.598		0.592		0.414
	Navy					
	Marine					
	Air Force					
Serve in Hometown	Army					
	Military Reserve	0.338		0.427		0.378
	National Guard	0.408		0.442		0.406
	Navy					
	Marine					
	Air Force					

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Hi-Tech Opportunity	Civilian Career	Self- Confidence	Develop Potential	Mental Challenge
Civilian Career	Army	0.487				
	Military Reserve	0.430				
	National Guard					
	Navy	0.494				
Develop Self- Confidence	Marine	0.468				
	Air Force	0.476				
	Army	0.519	0.576			
	Military Reserve	0.512	0.615			
Develop Potential	National Guard		0.561			
	Navy	0.519	0.670			
	Marine	0.452	0.583			
	Air Force	0.466	0.480			
Develop Potential	Army	0.529	0.579			
	Military Reserve	0.588	0.599	0.699		
	National Guard		0.585	0.757		
	Navy	0.541	0.611	0.623		
Develop Potential	Marine	0.540	0.652	0.747		
	Air Force	0.575	0.672	0.631		
			0.513	0.726		
			0.639	0.670		

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Hi-Tech Opportunity	Civilian Career	Self- Confidence	Develop Potential	Mental Challenge
Mental Challenge	Army	0.498	0.515	0.589	0.627	
	Military	0.464	0.476	0.562	0.546	
	Reserve		0.548	0.477	0.629	
	National Guard		0.597	0.604	0.680	
	Navy	0.533	0.516	0.547	0.664	
	Marine	0.580	0.566	0.616	0.690	
	Air Force	0.500	0.513	0.543	0.652	
Become More Mature	Army	0.480	0.490	0.629	0.614	0.568
	Military	0.562	0.508	0.655	0.687	0.518
	Reserve		0.520	0.573	0.562	0.595
	National Guard		0.661	0.692	0.644	0.633
	Navy	0.445	0.489	0.633	0.603	0.641
	Marine	0.472	0.426	0.602	0.648	0.558
	Air Force	0.495	0.541	0.548	0.638	0.614
Obtain Skill Training	Army	0.564	0.535	0.533	0.596	0.546
	Military	0.603	0.574	0.576	0.631	0.498
	Reserve		0.571	0.493	0.632	0.614
	National Guard		0.508	0.550	0.621	0.495
	Navy	0.573	0.631	0.553	0.683	0.595
	Marine	0.545	0.531	0.440	0.468	0.547
	Air Force	0.561	0.519	0.521	0.595	0.519

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Hi-Tech Opportunity	Civilian Career	Self- Confidence	Develop Potential	Mental Challenge
Work with High Quality People	Army	0.601	0.494	0.569	0.587	0.546
	Military	0.618	0.568	0.563	0.579	0.493
	Reserve		0.526	0.555	0.617	0.553
	National Guard		0.584	0.622	0.594	0.559
	Navy	0.663	0.555	0.565	0.638	0.568
	Marine	0.653	0.519	0.459	0.531	0.548
Cash for Education	Air Force	0.688	0.520	0.546	0.634	0.537
	Army	0.444	0.418	0.452	0.436	0.403
	Military	0.386	0.323	0.395	0.460	0.323
	Reserve		0.388	0.349	0.395	0.372
	National Guard		0.530	0.528	0.479	0.439
	Navy	0.426	0.467	0.425	0.450	0.415
Exciting Weekends	Marine	0.499	0.417	0.364	0.435	0.424
	Air Force	0.459	0.464	0.492	0.515	0.404
	Army					
	Military					
	Reserve		0.456	0.444	0.493	0.511
	National Guard		0.549	0.500	0.466	0.501
	Navy					
	Marine					
	Air Force					

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Hi-Tech Opportunity	Civilian Career	Self- Confidence	Develop Potential	Mental Challenge
Serve in Hometown	Army					
	Military					
	Reserve		0.386	0.371	0.325	0.333
	National Guard		0.426	0.499	0.452	0.351
	Navy					
	Marine					
	Air Force					

	Become More Mature	Obtain Skill Training	High Quality People	Cash for Education	Exciting Weekends
Obtain Skill Training	Army	0.570			
	Military	0.629			
	Reserve	0.559			
	National Guard	0.529			
	Navy	0.575			
	Marine	0.448			
	Air Force	0.579			
Work with High Quality People	Army	0.541	0.639		
	Military	0.500	0.651		
	Reserve	0.528	0.623		
	National Guard	0.590	0.560		
	Navy	0.520	0.682		
	Marine	0.467	0.656		
	Air Force	0.581	0.674		

Correlations of Perception Items: All Service Referents (continued)

	Military Service Referent	Become More Mature	Obtain Skill Training	High Quality People	Cash for Education	Exciting Weekends
Cash for Education	Army	0.457	0.455	0.471		
	Military	0.376	0.379	0.416		
	Reserve	0.488	0.412	0.479		
	National Guard	0.473	0.417	0.456		
	Navy	0.463	0.481	0.450		
	Marine	0.353	0.449	0.516		
	Air Force	0.447	0.488	0.481		
Exciting Weekends	Army					
	Military				0.300	
	Reserve	0.493	0.535	0.404	0.399	
	National Guard	0.526	0.337	0.450		
	Navy					
	Marine					
	Air Force					
Serve in Hometown	Army					
	Military					
	Reserve	0.376	0.299	0.308	0.358	0.503
	National Guard	0.428	0.367	0.376	0.378	0.459
	Navy					
	Marine					
	Air Force					

## 5. AN INITIAL EXPLORATION OF THE DUAL-MARKET THEORY

Veronica F. Nieva and Bruce F. Allen

### Overview

#### Requirement

To provide information on the size and distribution of the college- and work-oriented high school student markets, to explore the validity of the hypotheses that the two markets respond to different sets of appeals, and to assess the potential receptivity of the two markets to Army Recruiting efforts.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS), respondents were asked questions regarding their educational background, enlistment related plans, the importance of various Army attribute statements, and their belief that the attributes are provided by the Army. The analyses are based on responses to these questions by 4,096 16- to 24-year-old males in the Army's primary enlisted recruiting market interviewed between Oct 86 and June 87.

#### Results

Demographic description. College-oriented and work-oriented high school students are roughly equally distributed across brigades. An overall racial group comparison shows no significant difference by racial group. College-oriented students tend to be slightly younger than their work-oriented counterparts, and a greater proportion of college-oriented students have completed higher grade levels. College-oriented students aspire to higher levels of education.

Market quality. College-oriented students achieve significantly higher grades in school than their work-oriented counterparts. Significantly higher proportions of college-oriented students have taken or are planning to take high school mathematics courses (algebra, geometry, intermediate algebra, and trigonometry).

Importance of Army attributes. Work-oriented and college-oriented students are not significantly different in their rating of most Army attribute statements. Exceptions include money for college, stepping stone between high school and college, mental challenge, and leadership skills, which were significantly more important to college-oriented high school students.

Enlistment potential of the dual-markets. In general, work-oriented high school students constitute a more favorable market for Army recruiters. Work-oriented high school students display higher aided and unaided intentions to enlist. The Army image is also more

favorable among work-oriented than among college-oriented students. The importance-perceptions gaps were also smaller among the work-oriented group than among the college-oriented group.

Conclusions and directions for further research. College and job orientation among high school students does distinguish between the two groups in terms of their educational experience and their plans. However, there is very little difference between these two groups in terms of their value structures.

Work-oriented high school students are more favorably inclined toward the Army in terms of their intentions to enlist, their view of the Army presenting more opportunities to obtain the desired attributes. Indications of declining favorability of the work-oriented group toward the Army suggests a need for more research on this group.

Results concerning the importance-perceptions gap provide potential suggestions for the Army advertising program. For both groups, working with high-tech equipment seems to be an "oversold" attribute. Conversely, potentially "undersold" attributes include civilian career development and job variety. For the work-oriented group, the focus on money for education is largely irrelevant and could be greatly reduced.

#### Utilization

This report provides information useful to Army policymakers in evaluating the dual-market concept and in evaluating the relative emphasis of advertised Army attributes in each recruiting market.

#### Introduction

One of the most important distinctions underlying the U.S. Army Recruiting Command's marketing and advertising strategy for the active Army is that made between the high school students who are college-oriented and those who are work-oriented. The focus on high quality recruits has been often operationalized in terms of pursuing the college-oriented market and emphasizing incentives that are expected to appeal to this market. This chapter begins by presenting basic information about the two high school markets. It presents data on the size of these two high school markets, in the United States as a whole, and in recruiting region and racial group. Other demographic information about the two groups is also presented.

The dual-market concept assumes that college- and work-oriented high school groups can be distinguished in terms of their posthigh school aspirations and the relative value they place on college and job oriented appeals. For example, college-oriented students are hypothesized to be attracted by opportunities for personal growth and challenge, as well as immediate money for college, while work-oriented students are thought to be interested in job opportunities and skill training. This chapter explores the validity of the differential



value structure hypothesis by testing for group differences in the attributes that each considers important in his plans for the future.

This chapter also analyzes the potential receptivity of the two markets to Army recruiting efforts. Four sets of indicators of market receptivity are analyzed: enlistment intentions, enlistment related behaviors, perceptions of the Army in terms of the attributes emphasized in Army advertising, and the importance-perception gap index.

### Methodology

The data presented in this chapter include only Primary Male Analytic Sample (PMAS) high school students. Investigation of the dual-market concept begins with providing an empirical definition of the two high school groups, and examining the distribution of the groups by recruiting brigade and racial/ethnic identification. Percentages are presented as well as population estimates corresponding to each percentage. Population estimates provide information regarding an important initial concern of market segmentation analysis, the size of the potential high school markets.

After presentation of basic distributional data, the characteristics of the two markets are compared on the major variables which the dual-market theory suggests will differ among the groups. The significance of the group differences is tested using the adjusted chi-square statistic appropriate for weighted data that was discussed in Chapter 2 of this report (Nieva, Wilson, & Allen, 1988).

### Results

#### Definitions and Distributions of the Dual-Market Segments

College-oriented high school students are defined as youth currently enrolled in regular high school who indicate that they definitely or probably plan to attend college. They constitute about 31% of the PMAS sample, and about 79% of the high school student sample. Work-oriented high school students are those who indicate that they will definitely not or probably not attend college. In addition, this group includes high school students who do not know whether they are going to college or who refused to answer the question. They constitute a much smaller group, about 8% of the PMAS sample, and about 21% of the high school sample. Of the estimated total of 4,001,215 high school students, 3,158,440 are classified as college-oriented, and 842,775 are classified as work-oriented.

Table 30 presents the quarterly percentages of college- and work-oriented students in the regular high school population. The distributions are fairly stable across quarters, with Winter 87 showing a very slightly higher percentage of college-oriented students than the other two seasons.

Table 30

Percentages and Population Estimates of College- and Work-Oriented High School Students

	College- Oriented	Population	Work- Oriented	Population
Fall 1986	78.3	2,894,773	21.7	800,883
Winter 1987	81.4	3,405,408	18.6	775,983
Spring 1987	76.9	3,175,122	23.1	951,459
Three Quarters	78.9	3,158,441	21.1	842,775

$$\chi^2 = 2.8, \text{ n.s.}$$

Tables 31 and 32 show how college- and work-oriented students are distributed by region and racial/ethnic identification and provide corresponding population estimates. The distribution and population information can be useful in targeting advertising with specific appeals to various regions, racial/ethnic, and age groups.

Table 31

Percentages and Population Estimates of College- and Work-Oriented High School Students in Recruiting Brigades

	College Oriented	Population	Work Oriented	Population
1st Recruiting Brigade NE	79.2	688,294	10.8	180,220
2nd Recruiting Brigade SE	74.9	576,156	25.1	193,075
4th Recruiting Brigade MW	78.3	740,449	21.7	205,702
5th Recruiting Brigade SW	78.7	633,213	21.3	171,139
6th Recruiting Brigade W	84.9	520,329	15.1	92,639

$$\chi^2 = 6.6, \text{ n.s.}$$

Table 32

## Percentages and Population Estimates of College- and Work-Oriented High School Students in Ethnic/Racial Groups

	College-Oriented	Population	Work-Oriented	Population
White	79.5	2,577,901	10.5	665,303
Black	73.4	428,880	26.6	155,424
Hispanic	82.5	302,642	17.5	64,283
Asian/Pacific	93.8	97,717	6.2	6,499
Indian/Alaskan	75.4	26,013	24.6	8,479

Note. Percentages add up to more than 100 because Hispanics overlap with Black and White Groups.

$$\chi^2 = 9.0, \text{ n.s.}$$

Table 31 shows that the percentages of college- and work-oriented students similar and not significantly different across recruiting brigades, although the 6th Recruiting Brigade (West) has a noticeably larger proportion of college-oriented students than the other brigades. However, because of the distribution of high school students across brigades, the largest college-oriented market is not found in the West, but rather in the Midwest (4th Recruiting Brigade).

Table 32 shows the percentages of college- and work-oriented high school students in various racial/ethnic groups. Again, an overall racial group comparison shows no significant differences are found in the college and work distributions by race. Nevertheless, the observed differences are interesting, and could be substantially useful to a marketing plan. Whites, who comprise the largest racial/ethnic group (81% of the high school population), have the distribution that most closely resembles that of the entire high school population. Blacks, constituting 14.6% of the high school population, have a slightly lower percentage (73.4%) of college-oriented students. Hispanics, who constitute 9.2% of the high school population, show a slightly higher percentage of college-oriented students (82.5%) than the total high school population. It should be noted that the Hispanic group is self-identified and can overlap with the White and Black groups. The Asian/Pacific group shows a very high percentage of college-oriented students (93.8%), while the percentage of college-oriented students in the Indian/Alaskan group resembles that of the overall population (75.4%) are college-oriented. Since these two

groups constitute very small proportions of the high school population, 2.6% and .9% respectively, the number of actual interviews from these groups is quite low, thus making these estimates somewhat unstable.

#### Comparisons of Dual-Market Characteristics

Demographic characteristics. Tables 33 to 37 present comparative data on the college- and work-oriented high school groups. College-oriented students tend to be significantly younger than their work-oriented counterparts. Table 33 shows that 80.7% of the college-oriented students are 16 and 17 years of age, compared to 72.8% of the work-oriented students.

Table 33

Percentages of College- and Work-Oriented High School Students in Different Age Groups

	16 Years	17 Years	18 Years	19 Years	20-24 Years
College-Oriented	43.1	37.6	16.2	2.2	.9
Work-Oriented	42.5	30.3	20.4	5.6	1.2

$$\chi^2 = 13.9, p < .05.$$

Table 34 shows the education levels completed by college- and work-oriented students. A greater proportion of the college-oriented students (79.9%) have completed the higher grade levels (10th and 11th grades) compared to the work-oriented students (63.8%). As might be expected, the two groups differ greatly and significantly in their educational plans. The majority of the work-oriented students (72.9%) do not plan to go beyond the 12th grade, while this is true for only 10.8% of the college-oriented students (Table 35). Interestingly, similar percentages in each group (11.8% of the college-oriented and 14.4% of the work-oriented) plan to complete additional schooling beyond the 12th grade in two-year colleges or vocational schools.

Table 34

Percentages of College- and Work-Oriented High School Students  
Completing Different Educational Levels

	8th Grade	9th Grade	10th Grade	11th Grade
College-Oriented	4.2	16.7	39.8	40.1
Work-Oriented	9.0	27.2	29.6	34.2

$$\chi^2 = 31.8, p < .05.$$

Table 35

Percentages of College- and Work-Oriented High School Students With  
Different Education Plans

	9-12 Grade	1-4 Yr. College	1-3+ Yrs. Graduate	Votech, Business, and 2 Yr. college
College-Oriented	10.8	57.3	14.2	11.8
Work-Oriented	72.9	4.5	1.0	14.4

$$\chi^2 = 499, p < .05.$$

The market group differences in educational attainment and plans are mirrored in the group differences on two indicators of "market quality", grades achieved in school, and math courses taken. Table 36 shows the percentages of college- and work-oriented students with different grades achieved in school. As might be expected, the college-oriented students receive significantly better grades than the work-oriented. Thirty-eight percent of the college-oriented students report that they receive mostly A's or mostly A's and B's, compared to 13.8% of the work-oriented. On the lower end of the scale, only 11.9% of the college-oriented students receive mostly C's or mostly C's and D's, compared to 29% of the work-oriented students. The school-grade differences are paralleled by the differences in percentages of each group who have taken or are taking math courses: elementary algebra, geometry, intermediate algebra and trigonometry (Table 37). A larger percentage of college-oriented students have taken each of these courses compared to work-oriented students.

Table 36

Percentages of College- and Work-Oriented High School Students With Different Grades

	Mostly A's and mostly A's & B's	Mostly B's and mostly B's & C's	Mostly C's and mostly C's & D's	Mostly D's and mostly F's
College-Oriented	38.0	45.3	11.9	.4
Work-Oriented	13.8	46.15	29.0	1.2

$$\chi^2 = 80.3, p < .05.$$

Table 37

Percentages of College- and Work-Oriented High School Students Taking Math Courses

	Elementary Algebra	Geometry	Intermediate Algebra	Trigonometry
College-Oriented	84.5	67.2	62.0	29.3
Work-Oriented	58.6	24.7	28.9	6.7
$\chi^2$	67.8*	191.2*	107.4*	236.7*

Note. Also includes students who have taken or are planning to take math courses.

\* $p < .05$ .

#### The Importance of Army Attributes

One of the assumptions of the dual-market theory is that the college-oriented and work-oriented markets have different value structures, i.e. the two groups would consider different attributes important. Specifically, the theory would suggest that the college-oriented students would be more interested in self-development opportunities as well as incentives specifically linked to college entry. In contrast, the work-oriented students would be expected to value job and skill development opportunities more than the college-oriented.

Table 38 contains the percentages of each market group rating each attribute asked about the active Army as important. The data shows no support for such a differentiated pattern of responses. Comparisons of the two groups on each attribute show that the college-oriented students were more likely to value each attribute (except for hi-tech equipment) compared to the work-oriented students, although the differences were small. Significant differences were obtained for two college-related attributes (stepping stone-between high school and college and money for education), and two general self-development attributes (i.e. leadership skills and mental challenge).

Table 38

Percentages Rating Opportunities "Important" Or "Very Important" Among College-Oriented and Work-Oriented High School Students

	College-Oriented	Work-Oriented	$\chi^2$
Job Variety	92.7	87.9	3.8
Physical Challenge	80.4	78.6	0.4
Proud Experience	91.3	89.4	0.9
Step Between HS and College	60.7	52.2	6.3*
Leader Skills	79.6	71.4	8.2*
Hi-Tech Equipment	69.7	70.1	0.0
Civilian Career	90.8	87.1	3.3
Self-Confidence	88.3	88.2	0.0
Develop Potential	91.3	87.9	2.8
Mental Challenge	81.5	72.0	11.5*
Mature & Responsible	89.5	87.8	0.6
Skill Training	85.0	84.9	0.0
Hi-Trained Co-Workers	80.0	78.5	0.3
Money for Education	81.2	60.6	49.5*

\*p < .05.

These results show only partial support for the dual-market hypotheses regarding the values of the college- and work-oriented groups. The groups do appear to differ on their interest in attributes that are clearly college related (stepping-stone and money for education), as well as attributes that are more indirectly linked to college aspirations (mental challenge and leadership). But they do not differ significantly in terms of their interest in job-related attributes (job variety, value in civilian career and skill training). In fact, the small differences obtained show that the college-oriented are slightly more likely to value their job-related attributes compared to their work-oriented counterparts. This interpretation could support that Army advertising cannot completely deemphasize the job aspects of the military commitment, regardless of which market they are targeting.

### The Enlistment Potential of the Dual-Markets

In general, the work-oriented high school group constitute a more favorable market for Army recruiters. Table 39 shows that the work-oriented market has a higher percentage of youth indicating both unaided and aided intentions to enlist in the Army compared to the college-oriented market. However, these differences in intentions are not paralleled by the data on enlistment behaviors, where generally no significant differences are found between the groups (Table 40). (The only recruitment-related action reported by a larger percentage of college-oriented students was taking the Armed Services Vocational Aptitude Battery (ASVAB). This result could be artifactual, due to wording change in the question in the Spring 87 quarter. It is also likely that this result is real, but merely reflects greater test-taking likelihood, in general, among the college-oriented group).

Table 39

Percentages of College- and Work-Oriented High School Students with Enlistment Intentions

	Unaided Intentions	Aided Intentions
College-Oriented	1.6	20.4
Work-Oriented	5.2	29.2
$\chi^2$	11.5*	9.2*

\*p < .05.

Table 40

Percentages of College- and Work-Oriented High School Students Taking Actions Related to Enlistment

	Talk to Anyone	Talk to Recruiter	Test	Visit	Gift
College-Oriented	34.2	16.1	15.5	7.8	7.0
Work-Oriented	33.2	14.3	10.2	6.8	8.5
$\chi^2$	0.1	0.5	4.8*	0.3	0.8

\*p < .05.



The more favorable posture of the work-oriented market, however, cannot be taken for granted. As indicated earlier by the quarterly reports, general enlistment intention has dropped significantly in this group from its high level in the fall. Although the decline for active Army intentions is not statistically significant for the three quarters thus far, the pattern is consistent and bears watching.

The work-oriented market shows greater potential for Army recruitment in another set of indicators, the percentage agreeing that the Army offers the attributes that are advertised by the Army. In general, the Army image is more favorable among the work-oriented than among the college-oriented. Table 41 shows that the average agreement with Army attributes is higher among the work-oriented students (77.2%) than among the college-oriented students (72.9%) for the school year 1986-87. When individual attributes asked about the Active Army are examined significant differences between the work and college-oriented students are found for five attributes. Work-oriented students are more likely to agree that the Army offers job variety, a stepping stone between high school and college, value in civilian career development, mental challenge, and skill training. Figure 19 shows the Army perceptions of the two high school groups.

Table 41

Percentage Agreeing with Army-Attribute Statements among College-Oriented and Work-Oriented High School Students

	College-Oriented	Work-Oriented	$\chi^2$
Job Variety	64.8	72.8	6.1*
Physical Challenge	82.9	80.0	1.2
Proud Experience	72.3	72.9	0.0
Step Between HS and College	46.0	60.5	17.5*
Leader Skills	74.9	74.3	0.0
Hi-Tech Equipment	80.8	84.0	1.4
Civilian Career	58.2	68.5	9.3*
Self-Confidence	74.5	76.6	0.5
Develop Potential	73.1	73.5	0.0
Mental Challenge	67.6	74.7	4.9*
Mature & Responsible	79.4	80.3	0.1
Skill Training	76.9	82.9	4.5*
Hi-Trained Co-Workers	75.7	80.8	3.0
Money for Education	78.6	79.2	0.0

\*p < .05.

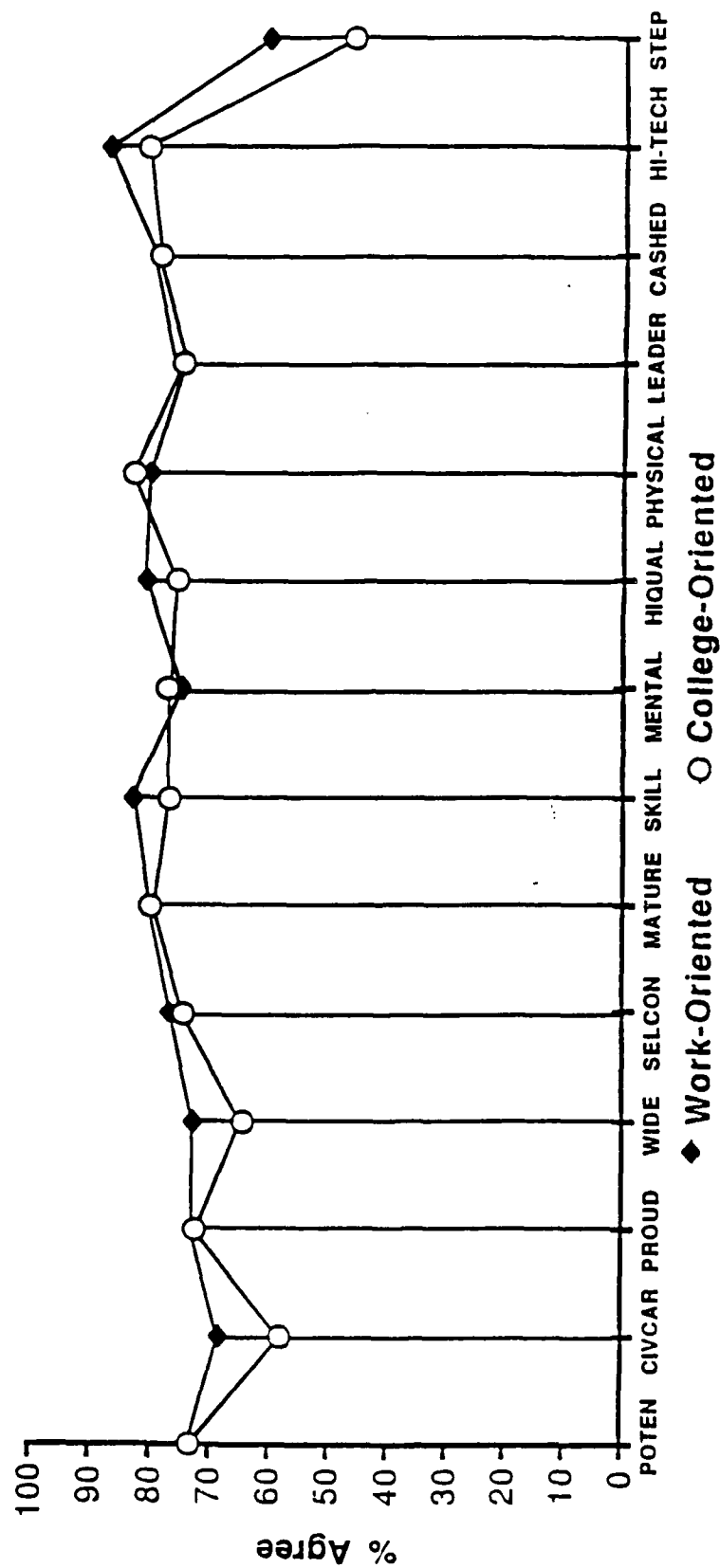


Figure 19. Primary Male Analytic Sample work-oriented and college-oriented perceptions of the Army.

Tracking with the decline in enlistment intentions among the work-oriented is a steady decline in the favorable perceptions of the Army among the work-oriented group. Table 42 shows the quarterly average perceptions of the two high school market groups. This decline contrasts with the perceptions of the college-oriented group which have been stable across quarters. The notable drop in the favorability of perceptions among the work-oriented students occurred from fall to winter (80.8% and 74%), the sample period in which a significant decline in enlistment intentions was observed in the work-oriented group.

Table 42

Average Agreement with Army Attribute Statements among College- and Work-Oriented High School Students

	Fall	Winter	Spring
Army Perceptions			
College-Oriented	72.2	72.0	71.3
Work-Oriented	80.8	74.0	73.1

#### Importance-Perception Gaps Among College- and Work-Oriented Students

In the previous chapter the importance-perception gap (the difference between the percentage of youth who value an attribute and the percentage who perceive the Army as offering the attribute) was presented as an index that might signal the need for Army advertising attention in specific areas. The index also points to areas which may be "oversold" or at least need no further support from the advertising program.

The importance-perception gap indices provide yet another indicator that the work-oriented group shows more potential for Army recruiting than does the college-oriented group. The data for the two groups are presented in Table 43 and illustrated in Figure 20. In general, the importance-perception gaps are smaller among the work-oriented group than among the college-oriented group, and there are more areas for which gaps exist among the college-oriented group compared to the work-oriented group.

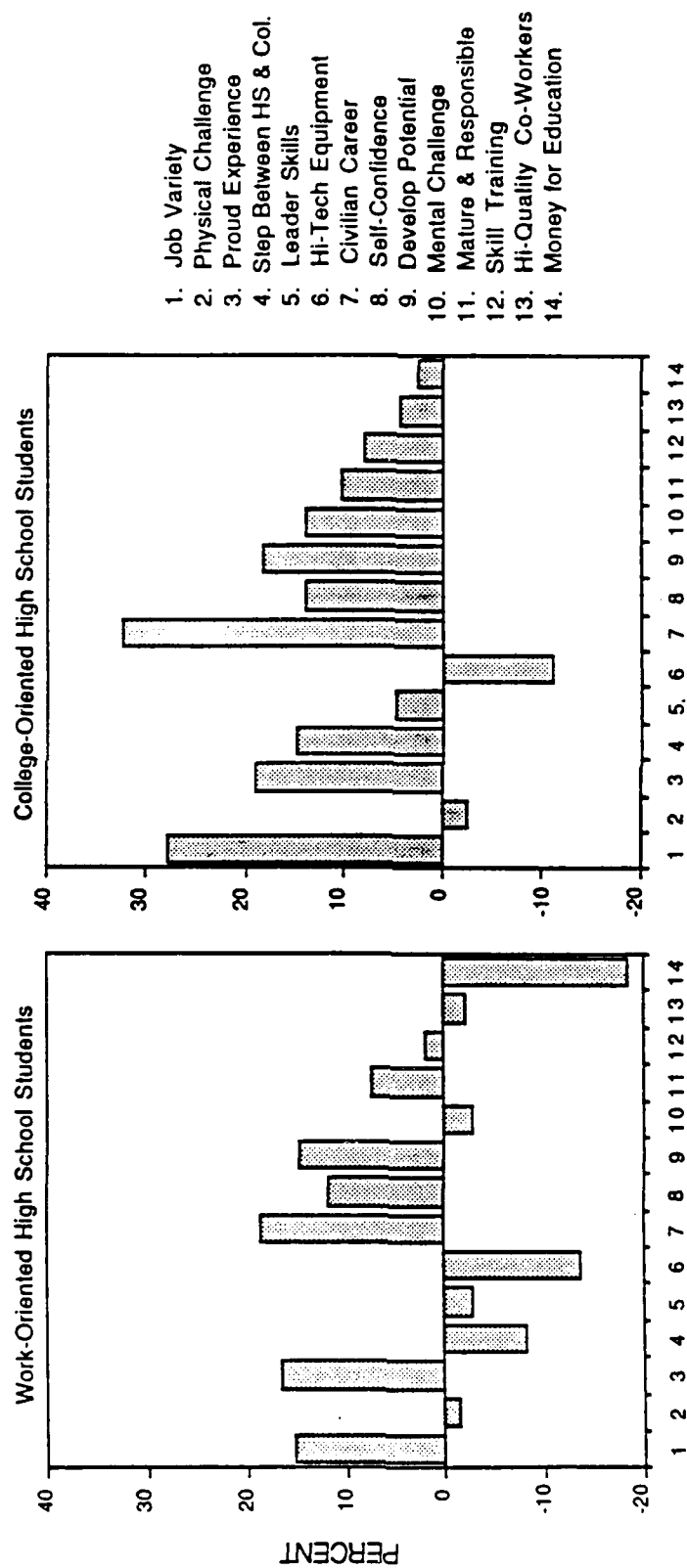


Figure 20. Primary Male Analytic Sample Value-Image gaps.

Table 43

Importance-Perception Gaps among College- and Work-Oriented High School Students

	College-Oriented Importance Perception Gap			Work-Oriented Importance- Perception Gap		Difference between Gap	
Job Variety	87.9	72.8	15.1	92.7	64.8	27.9	12.8
Physical Challenge	78.6	80.0	-1.4	80.4	82.9	2.5	3.9
Proud Experience	89.4	72.9	16.5	91.3	92.3	19.0	2.5
Step Between HS and College	52.2	60.5	-8.3	60.7	46.0	14.7	24.0
Leader Skills	71.4	74.3	-2.9	79.6	74.9	4.7	1.8
Hi-Tech Equipment	70.1	84.0	-13.9	69.7	80.8	-11.1	-7.2
Civilian Career	87.1	68.5	18.6	90.8	58.2	32.6	14.0
Self-Confidence	88.2	76.6	11.6	88.3	74.5	13.8	2.2
Develop Potential	87.9	73.5	14.4	91.3	73.1	18.2	3.8
Mental Challenge	72.0	74.7	2.7	81.5	67.6	13.9	11.2
Mature & Responsible	87.8	80.3	7.5	89.5	79.4	10.1	2.6
Skill Training	84.9	82.9	2.0	85.0	76.9	8.1	5.1
Hi-Trained Co-Workers	78.5	80.8	-2.3	80.0	75.7	4.3	2.0
Money for Education	60.6	79.2	-18.6	81.2	78.6	2.6	21.2

Examination of the importance-perception gaps for each individual attribute leads to other interesting conclusions. While the general pattern of results shows much differentiation between the two groups, there are important similarities. It is notable that the largest gaps are found for the same four attributes within the two groups. For both groups, the largest gaps are found for two job-related attributes, (civilian career development and job variety) and two more general self-development related attributes (experience to be proud of and opportunities to develop one's potential). These data support the Army's current stress on the self development theme in its advertising program. In addition, however, there appears to be a need to place greater emphasis on career-oriented messages to appeal to both high school market groups.

For both groups, there are relatively small gaps (less than 5% in either direction) for the attributes Physical Challenge, Working with High-Quality People and Leadership Skills. A final similarity is that the attribute Working with High-Tech Equipment is possibly oversold in

both groups; i.e., this attribute is considered important by a smaller percentage in both groups than the percentage who perceive it as being offered by the Army.

There are some attributes, however, on which the importance-perception indices differ between the groups. Two college-oriented messages, Stepping-Stone between High School and College and Money for Education, appear to be potentially "oversold" among the work-oriented group. That is, among the work-oriented students, larger percentages see the Army as offering it compared to the percentages who value it. Among the college-oriented group there is a relatively large importance-perception gap for the attribute, stepping-stone between high school and college, suggesting that these attributes could be further emphasized in advertising directed at the college-oriented market. Another attribute that could be further emphasized in college-oriented advertising is mental challenge, which has a large importance-perception gap in this, but not the work-oriented group. For both groups, nor further emphasis on the attribute money for education seems needed. This attribute is predictably "oversold" heavily for the work-oriented group, and has only a very small gap for the college-oriented group.

### Conclusions

This initial investigation of the dual-market theory has supported several of the theory's working assumptions and disconfirmed others. College and job orientation among high school students does appear to distinguish between two different market segments. As expected, the two groups of high school students differ in terms of their educational experiences and plans. Contrary to expectations, there is very little difference between the two groups in their value structure. The greater differences between the groups appear to be in their perceptions of the opportunities provided by the Army. That is, although both groups value the same attributes, the work-oriented students are more likely to see the Army as presenting them with opportunities to obtain the attributes desired. The more favorable perceptions of Army opportunities of the work-oriented students are likely to be related to their higher levels of intentions to enlist in the Army.

Although the results suggest that the work-oriented group remains the easier market for Army recruiting, several factors should not be ignored. The first is the well known belief, supported by the data in this chapter, that the work-oriented group are academically less successful than the college-oriented groups. To the extent that recruit quality remains an important concern, the work-oriented market may constitute a somewhat deficient pool. Second, the work-oriented group is much smaller than the college-oriented group; thus, even with its greater interest in the Army, the work-oriented group is not likely to provide a sufficiently large pool for the Army's recruiting needs. Third, there are indications that the favorability of the work-oriented group towards the Army is declining, which may signal a need for renewed attention to this group.

The results presented in this chapter concerning the importance-perception gaps provide potential suggestions for the Army advertising program. For both market segments, the Army's message on working with high-tech equipment appears to be potentially "oversold". Its current self development message remains an important focus and may be usefully supplemented by a greater emphasis on career-related attributes. The largest importance-perception gaps for both groups are found for civilian career development and job variety.

The data also suggest directions for refining advertising that is specifically targeted to each market. For the college-oriented group, the value of the Army as a stepping stone between high school and college and as an experience that provides mental challenge could be further emphasized. For the work-oriented group, the focus on money for education is largely irrelevant and could be greatly minimized.

### References

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## 6. MEDIA HABITS

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### Overview

#### Requirement

To provide preliminary descriptions of patterns of youths' media habits as well as their preferences for media content. To explore the feasibility of developing a small number of reliable summary indicators of youth media habits.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS) between October 1986 and June 1987, survey respondents were asked about their media consumption habits. The analyses reported in this chapter are based on responses to these questions by 2,026, 16- to 24-year-old males in the Army's primary enlisted recruiting market.

In general, each analysis begins with descriptive information for variables of interest. Next, associations among variables are explored. These are followed by analyses to identify, construct, and evaluate whether summary measures of media-use exist. This process is followed for patterns in media consumption, preferences within media types, and across media content.

#### Results

Patterns of media consumption. Patterns of overall media usage suggest that regular newspaper and radio (especially FM) usage are most frequent, though more hours are spent watching television than reading the newspaper. There is little association among the youths' regular television viewing, radio listening, and both magazine and newspaper reading.

Only one reliable summary indicator was identified: combined weekly hours spent watching network, cable and videocassette recorder (VCR) television. The remaining variables cannot be combined to form reliable indicators of media usage. For example, AM radio appears to have its own audience distinct from the audience of FM radio.

Preferences in television programming. Of seven programming categories investigated, youth were most likely to report that they are regular viewers of comedy, movies, sports (80%-90%). They were least likely to watch talk shows and dramatic presentations (40%-50%) with music and mystery programs in between (55%-70%). Analyses indicate that programming categories cannot be combined to form summary indicators of television (TV) preferences.

Preferences in radio programming. Rock music is the most popular type of radio programming of the eight categories investigated. Youth indicate they regularly listen to rock radio (over 80%) as opposed to pop, news, and sports radio (50%-60%), easy listening and country western (30%-40%), and talk and classical (15%-20%). Analyses indicate that news, sports, and talk programs can be combined to form a reliable scale indicating that youth who listen to radio for news are also relatively likely to use radio to gain information about current issues and sports. Conversely, musical programs do not cluster reliably indicating that there is little predictable overlap in audiences among the various types of music programs.

Preferences in newspaper sections. Among regular readers of newspapers, 83% indicate that they regularly read the news section. News is followed in popularity by sports (78%), local (76%), comics (66%), and classified (62%) sections. Least frequently read are style (36%) and food (11%) sections. Newspaper section variables cannot be reliably combined to form summary indicators of newspaper section preferences.

Preferences in magazine content. Magazine readers most frequently mention regularly reading general editorial magazines such as Time and Newsweek (34%) and sports magazines (33%). Less often mentioned are auto magazines (18%) and magazines aimed at outdoor enthusiasts (9%) and the minority (7%) and influencer (7%) populations. Analyses indicate that types of magazines cannot be reliably combined to form summary indicators of magazine content preferences.

Preferences across media. A reliable summary indicator of sports interest was identified by combining regular viewing of sports events on television, listening to sports broadcasts on radio, and reading about sports in the newspaper and magazines. College freshmen and sophomores, college-oriented high school students, and Blacks monitor a greater average number of media for sports than other educational or racial groups. Cross-media interest in news was assessed by combining regular listeners to news on the radio, readers of news sections of the newspaper, and news magazines. Although a reliable summary indicator of news interest was not identified for the sample as a whole, strong subgroup differences among educational, regional, age, and racial groups suggests that additional analyses are needed to determine whether a reliable summary indicator can be identified for some subgroups.

Conclusions and future analytic directions. The first analysis goal, describing media monitoring patterns, has been achieved for the primary male enlisted market as a whole. Subsequent analyses will continue to explore how educational, regional, age, racial, and ethnic groups differ from the overall pattern and among each other.

The second analysis goal, to explore the feasibility of combining variables to form reliable summary indicators of media preferences, has also been achieved. Within and between each of the four media, it appears that preferences cannot be summarized by combining types of

media content. Rather, there are distinct audiences for each type of content and media. The only exceptions are a summary indicator for sports interest across media, a summary indicator for informational programming on the radio including news, sports, and talk programs, and a summary indicator for combined hours of network, cable, and VCR television viewing.

Future analyses will be directed to determine how sample groups differ in content preferences within media and in sports and news interest across media. Analyses will also focus on how these group differences relate to advertising recall and perceptions of the Army.

### Utilization

This chapter provides information useful to Army policymakers in evaluating media selection plans. Information provided will also increase the effectiveness and efficiency of Army advertising placements.

Basic analyses reported in this chapter will also help other Army analysts in further media analyses using the ACOMS data files.

### Introduction

This paper summarizes our analysis of the information on media habits from the ACOMS youth interviews conducted between 13 October 1986 and 30 June 1987. We begin with a brief statement of the purpose and organization of the analysis, and a description of the data sources and questionnaire items used in the analysis. Then, we describe the results themselves, and conclude with our recommendations for further steps in the analysis of media habits.

This chapter serves several purposes. First, the description of media habits of the youth population is obviously important in guiding the placement of Army advertising. By media habits, we mean two separate but related domains: (a) patterns in youth monitoring of media (time spent watching television, listening to radio, reading newspapers and magazines); and (b) preferences within and across media (e.g., preferences for televised mystery, drama, sports, etc., for radio broadcasts of pop and rock music, talk and sports). The identification of patterns in media selection and program content preferences can help place informed advertising.

The second purpose of the analysis is to provide scale summaries of these patterns for use in ACOMS models that assess the effectiveness of Army advertising. In subsequent analyses we will show the associations between media consumption and program preference, and perceptions of the Army and what it offers. These efforts, however, will rely on a prior summary of media habits which is included in this chapter.

The analysis is organized as follows. We begin by examining patterns of media choice, patterns in the media which youth respondents regularly watch, read, or listen to, and the amounts of time they

spend doing each. We then report analyses of preferences within medium, patterns in the kinds of television shows youth watch, types of radio shows they listen to, types of magazines they read, and sections of newspapers they read. We then discuss preferences in content across media--for example, interest in sports programs on radio and television, in sports magazines and sports sections of the newspaper. In each section of the analysis, we develop and test possible scale summaries of the results.

Our general analytical strategy was to begin with univariate distributions of variables of interest, and then to present matrices of associations among variables. These were followed by factor analyses to identify candidate scaling measures. Scales were constructed and evaluated, and summaries of the results presented for each section.

#### Methods and Data

The analyses which follow are based on the Primary Male Analytic Sample (PMAS) of youth interviewed for ACOMS during School Year 86/87 (SY86/87) between 13 October 1986 and 30 June 1987. The PMAS is a subset of the youth consisting of males in the 48 contiguous United States between the ages of 16 and 24 who have not served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college Reserve Officers' Training Corps (ROTC) course; and who have not yet completed their sophomore year in college.

A total of 4,096 PMAS youth was interviewed for ACOMS during SY86/87. However, only a random half of these youth received the questions on media habits analyzed in this paper, so that our working sample for this paper constitutes 2,026 PMAS cases. The ACOMS sample is weighted to represent a cross section of American 16- to 24-year-olds.

In the media habits section of the ACOMS interview, youth were asked if they regularly monitor various media and, if so, they were asked about their preferences in programming and content. Beginning 1 July 1987, youth are asked about preferences whether or not they regularly monitor the medium. Only respondents saying they spend no time monitoring a medium will be excluded from preference questions.

For television (TV), youth were asked if they regularly watch TV, and if so, how many hours a week they watch programs on commercial networks and programs on commercial cable stations. Respondents indicating that they do regularly spend at least some time each week watching television (more than zero hours), were asked if they regularly watch sports, suspense or mystery, drama, music/music video, situation comedy, movies and/or talk shows. Youth were then asked if they have a VCR, and if so, how many hours a week they watch VCR recordings.

For radio, youth were asked if they regularly listen to the radio, and if so, how many hours a week they listen to AM radio and FM radio. If they indicated that they regularly listen and spend some

time (more than zero hours) a week listening to either AM or FM radio, they were asked whether they frequently listen to news, classical or pop music, country, sports, talk, rock and roll, and/or easy listening programs.

For newspapers, youth were asked how often they read the newspaper and how many hours a week they spend doing so. Those indicating that they do read the newspaper at least once a week were asked if they regularly read sports, comics, news, local, food, lifestyle and/or classified sections.

For magazines, youth were asked if they regularly read magazines and if so, the names of magazines (up to six) that they read regularly (at least three of the last four issues). These were then coded in terms of content as general editorial, sports, auto, outdoor, science, audio, and magazines generally directed to influencer and minority populations (see Figure 21).

## Results

### Patterns of Media Consumption

Youth respondents were asked whether they regularly watch television, whether they have a VCR, whether they regularly listen to the radio, read the newspaper at least once a week, and regularly read magazines. Table 44 presents the percentages of PMAS youth responding that they regularly monitor each medium, in order of likelihood.

Table 44

Percentages of Regular Media Monitoring by Primary Male Analytic Sample

Medium	Percentage
Newspaper	93.9
Radio	87.3
Television	67.1
Have VCR	66.7
Magazines	61.6

Note. Percentages are weighted data, based on 2,026 respondents.

Clearly, regular newspaper readership (defined as at least once a week) is most prevalent (93.9%), followed by radio listening (87.3%). Interestingly, in spite of the relatively high levels of monitoring all media, there do not appear to be strong associations among media.

Audio

Stereo Review  
High Fidelity

Auto

Car and Driver  
Hot Rod  
Car Craft  
Motor Trend  
Road and Track  
Cycle

General Editorial

Games  
Life  
Newsweek  
People  
Readers Digest  
Rolling Stone  
Time  
TV Guide

Influencer

U.S. News and World Report  
Money  
National Geographic

Outdoor

Field and Stream  
Outdoor Life  
Sports Afield

Science

Omni  
Popular Mechanics  
Popular Science

Sports

Inside Sports  
Sport  
Sporting News  
Sports  
Sports Fitness  
Sports Illustrated

Minority

Ebony  
Jet  
MBM

Figure 21. Interview magazine categories

The levels of association among media are presented in Table 45 as Yule's Q statistics. Yule's Q is a measure of association appropriate for dichotomous data. It is calculated as follows. If the variables are scored as "yes" and "no", we can compute the odds of being a "yes" on one variable in each category of the second variable. The ratio of these two odds (the odds ratio) is a measure of the association between the two variables, but has no bounds. The odds ratio minus one divided by the odds ratio plus one is Yule's Q. Q is most frequently used as a measure of scalability and has a range of -1 to +1. It is used for all of the associations between dichotomous variables presented in this report. (Yule & Kendall, 1950; Davis, 1971.)

Table 45

Associations among Media for Regular Monitoring by Primary Male Analytic Sample

(Table entries are Yule's Q statistics)

Medium	Watch TV	Have VCR	Listen to Radio	Read Newspaper	Read Magazines
Watch TV	-	-.054	.215*	-.070	.098
Have VCR		-	.123	.062	.178*
Listen to Radio			-	.315*	.210*
Read Newspaper				-	.479*
Read Magazines					-

Note. Yule's Q statistics are weighted data based on 2,026 respondents.

\* $p < .05$ .

There is a strong association between reading newspapers and reading magazines ( $Q = .479$ ;  $\chi^2(1) = 16.8$ ,  $p < .01$ ), and weaker associations between radio listening and reading either newspapers ( $Q = .315$ ;  $\chi^2(1) = 4.3$ ,  $p < .05$ ) or magazines ( $Q = .210$ ;  $\chi^2(1) = 6.4$ ,  $p < .05$ ). TV and VCR use seem independent, and are only weakly related to print consumption. Television viewing is, however, significantly related to radio listening ( $Q = .215$ ;  $\chi^2(1) = 6.5$ ,  $p < .05$ ). These findings suggest that the Army's media strategy of attempting to catch light television viewers through radio and print is especially well founded with respect to print advertising but that radio and television audiences overlap somewhat.

Youth who indicated regular use of a medium were also asked how many hours a week they viewed, read, or listened. For the current analysis, those who indicated they were not regular viewers were

assigned zero hours for that medium. Some of the hour totals seemed extremely high (more than three standard deviations above the mean) and likely to degrade the statistical estimates. These outliers were truncated to three standard deviations above the mean as recommended by Belsey, Kuh, and Welsch (1980). The means and standard deviations (SDs), as truncated, of the hours a week spent monitoring each medium are presented in Table 46.

Table 46

Mean Number of Hours Spent Monitoring Each Medium by Primary Male Analytic Sample with Standard Deviations

Medium	Mean	Standard Deviation
FM Radio	21.182	21.123
Television	9.967	11.336
Cable Television	4.166	6.812
Newspaper	3.819	3.332
VCR	2.941	4.135
Magazines	2.735	3.701
AM Radio	1.462	4.347

Note. Means and standard deviations are weighted data based on 2,026 respondents. Youth not regularly monitoring a medium assigned 0 hours. Outliers truncated to 3SDs.

The clear favorite of sampled youth among media is FM radio ( $M = 21.18$ ). The standard deviation is a large 21.12, indicating much variability in youth audience and skewness in viewership. Television is viewed an average of 9.97 hours a week, and other media less frequently by comparison.

The patterns of correlation among hours monitoring media are presented in Table 47. (Table entries are Pearson's product moment correlations). The hours spent monitoring media do cluster as television viewing (network, cable and VCR; all three relevant correlations are statistically significant with  $p < .01$ ), and print (newspaper and magazine;  $r = .293$ ,  $p < .01$ ). The association observed between radio listening and print consumption in response to questions of regular media monitoring seems mainly due to FM listening, since there is scant association either between AM and FM listening or between AM listening and newspaper or magazine reading. In any case, as noted above, FM constitutes the bulk of radio listening as shown in Table 46.



Table 47

Associations among Media in Hours Monitored by Primary Male Analytic Sample

(Table entries are Pearson's Product Moment Correlations)

Medium	Network TV	Cable	VCR	AM	FM	Paper	Magazine
Network TV	-	.467*	.216*	.110*	.086*	.063*	.032
Cable TV		-	.173*	.073	.040	.102*	.075
VCR			-	-.002	.062	.077*	.136*
AM Radio				-	-.031	.050	.063
FM Radio					-	.227*	.154*
Newspaper						-	.293*
Magazines							-

Note. Correlations are weighted data based on 2,026 respondents.

\* $p < .05$ .

The correlation matrix in Table 47 was subjected to a principal component factor analysis which resulted in three factors with factor loadings presented in Table 48.

Table 48

Factor Analysis of Media Monitoring Hours for Primary Male Analytic Sample

Medium	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Network TV	0.807	-0.001	0.120
Cable TV	0.776	0.041	0.037
VCR	0.581	0.141	-0.262
Newspaper	0.067	0.742	0.103
Magazines	0.048	0.707	0.123
FM Radio	0.045	0.626	-0.244
AM Radio	0.067	0.057	0.922
Eigenvalue	1.791	1.303	1.015

Note. Principal component, varimax rotation. Factor loadings are weighted data based on 2,026 respondents.

The factor analysis confirms the patterns of intercorrelation illustrated in Table 48. The media hours cluster into three main groups: television, FM radio and print, and AM radio. It may be the case that the clustering between FM radio listening and print consumption simply reflects the fact that both can be done at the same time, but this would not explain why AM radio listening does not cluster with these.

The clustering of variables produced in the factor analysis suggested the need for the construction of subscales of media use. Scales were created by summing the hours for network TV, cable TV and VCR use, and for FM radio, newspaper and magazine use. The former TV scale has a reliability of .706 using a standardized item alpha. The standardized item alpha, by operating on the correlation matrix, implicitly equalizes the variances of constituent items by standardizing the items. The scale of print and FM yields a standardized item alpha of .634. Thus, both clusters produce reliable scales of media use above the conventionally acceptable alpha level of .600, one for TV hours and one for FM radio and print media hours.

In summary, patterns of overall media usage among PMAS youth suggest that regular newspaper and radio (especially FM) usage are most frequent, although more hours are spent watching television than reading the newspaper. All distributions of media usage are highly skewed so that a substantial minority of cases have comparatively high values. Two clusters of media usage were identified using correlational and factor analytic techniques: television (network, cable and VCR) and print/FM (newspaper, magazine and FM radio). Both indicate an acceptable level of scale reliability.

#### Analysis of Logarithmically Transformed Viewing Hours

The data were then examined from a different perspective. Since the distributions were highly skewed, we logarithmically transformed the data to obtain more linear results. The natural logs of hours for each medium were calculated, with all zero values (those of respondents who claimed zero hours and respondents assigned zero hours because they did not receive the question) arbitrarily assigned a value of .05 to ensure inclusion in the transformed data set. A principal component factor analysis resulted in the retention of three factors, as shown in Table 49.

Table 49

## Factor Analysis of Logarithmically Transformed Hour Variables for Primary Male Analytic Sample (PMAS)

Medium	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Regular TV	0.893	0.000	0.015
Cable TV	0.889	0.023	-0.019
Newspaper	0.016	0.694	-0.015
Magazines	0.032	0.650	-0.145
AM Radio	0.183	0.259	0.741
VCR	0.195	0.278	-0.663
FM Radio	-0.011	0.572	0.144
Eigenvalue	1.723	1.314	1.030

Note. Principal component, varimax rotation. Factor loadings are weighted data based on 2,026 respondents.

Based on these results, we constructed summary scale variables composed of variables loading highly on each factor. The first scale variable consisted of regular and cable television; the second of newspapers, magazines, and FM radio; and the third of AM radio and VCR. Summary statistics and correlations were computed for these summary variables and the component logarithmic variables, in preparation for reliability testing. The standardized item alpha was computed for the summary scale variables. For Factor 1, standardized item alpha computations resulted in a score of .768, well above the .600 acceptance level. The second factor received a standardized item alpha of .445, well below the level of acceptance. An alpha of almost zero was found for the third factor. These findings roughly support those for the untransformed data. The scales were slightly reconfigured after logarithmic transformation, the most important being the omission of VCR use from a factor with regular and cable TV, but the transformation did not appear to improve the explanatory power of the factor structure.

Substantively, the results suggest that the Army's strategy of using print and radio advertising to capture light television viewers is a sound one. There is relatively little overlap among these groups. Obviously, this analysis cannot determine which media are most cost-effective.

#### Television Programming Preferences Among PMAS

Using the untransformed scale of television hours (combination of network, cable and VCR viewing hours), we then obtained the scale means for PMAS educational, regional, and age groups illustrated in

Table 50

## Mean Hours Television Viewing by Primary Male Analytic Sample (PMAS) Subgroups

PMAS Groups	Mean Hours
<u>Education</u>	
College Freshmen & Sophomores	13.5
College-Oriented High School Students	19.0
Work-Oriented High School Students	17.6
High School Graduates, Not Currently Enrolled	17.2
F(4,65)	8.3*
<u>Brigade</u>	
1st Recruiting Brigade	15.4
2nd Recruiting Brigade	19.3
4th Recruiting Brigade	14.9
5th Recruiting Brigade	19.2
6th Recruiting Brigade	16.0
F(5,64)	3.9*
<u>Age</u>	
16- to 17-year-olds	19.0
18- to 19-year-olds	15.5
20- to 21-year-olds	16.5
22- to 24-year-olds	16.3
F(4,65)	2.8*
<u>Race</u>	
White	16.5
Black	19.4
Asian/Pacific Islander	17.1
Alaskan/American Native	21.4
F(4,65)	1.6
<u>Ethnicity</u>	
Hispanic	14.8
Non-Hispanic	14.2
F(2,67)	2.2
PMAS TOTAL	17.0

Note. Means are weighted data based on 2,026 respondents.

<sup>a</sup>Television viewing hours include network, cable, and VCR viewing.

\* $p < .05$

Table 50. Significant differences were observed for educational groups ( $F(4,65)=3.3, p<.05$ ), regional groups ( $F(5,64)=3.9, p<.05$ ), and age groups ( $F(4,65)=2.8, p<.05$ ). College freshmen and sophomores appear to watch television less than the other educational groups. Youth in the Southeast (2nd Recruiting Brigade) and Southwest (5th Recruiting Brigade) have slightly higher average viewing hours than youth in other regions of the country and 16- to 17-year-olds appear to watch TV more than older youth. No significant racial or ethnic differences were found for mean number of television hours watched.

#### Preferences in Media Consumption

The preferences of 16- to 24-year-olds in media content was first examined within each medium separately. These analyses are reported in the following sections: Television, Radio, Newspapers, and Magazines. Then, preferences across media were explored by content area. Results of these efforts are reported in the Preferences across Media section.

#### Television

Preferences in television programming were first examined by exploratory scaling procedures aimed at identifying clusters among the seven programming categories: sports, suspense or mystery, drama, music/music video, situation comedy, movies, and talk shows. Of PMAS youth, only 67% consider themselves regular TV viewers. These analyses are confined to regular viewers.

Table 51 shows the percentages of regular television viewers who watch each type of programming. Clearly, comedy (88.0%), movies (84.2%), and sports (82.1%) programming categories are most popular among PMAS regular viewers. Music (68.0%) and mystery (59.4%) programs are intermediate in popularity while talk shows (43.9%) and dramatic (44.4%) programs are least likely to be viewed regularly.

Table 51

Percentages of Primary Male Analytic Sample (PMAS) Youth Regularly Viewing TV Program Types

TV Program Types	Percentage
Comedy	88.0
Movies	84.2
Sports	82.1
Music	68.0
Mystery	59.4
Drama	44.4
Talk	43.9

Note. Percentages are weighted data based on 1,352 respondents.

As a first step in the exploratory scaling analysis, Yule's Q statistic, as a measure of association, was computed for all possible pairs of program category variables resulting in the matrix shown in Table 52.

Table 52

Associations Among TV Program Types in Regular Viewership by Primary Male Analytic Sample

TV Program Types	Comedy	Sports	Mystery	Movies	Drama	Talk	Music
Comedy	-	.392*	.344*	.107	-.075	-.182	-.046
Sports		-	.113	-.114	-.142	.028	.150
Mystery			-	.310*	.388*	.171*	.121
Movies				-	.251*	.197*	.045
Drama					-	.333*	.101
Talk						-	.231*
Music							-

Note. Yule's Q statistics are weighted data based on 1,352 respondents.

\* $p < .05$ .

These findings indicated strong enough associations among several of the variables to warrant additional scaling efforts. Of particular interest were the associations between comedy and sports ( $Q = .392$ ;  $\chi^2(1) = 12.8$ ,  $p < .01$ ), comedy and mystery ( $Q = .344$ ;  $\chi^2(1) = 11.6$ ,  $p < .01$ ), and among mystery, movies, and drama (mystery and movies: ( $Q = .310$ ;  $\chi^2(1) = 11.7$ ,  $p < .01$ ); mystery and drama: ( $Q = .388$ ;  $\chi^2(1) = 32.2$ ,  $p < .01$ ); movies and drama: ( $Q = .251$ ;  $\chi^2(1) = 6.9$ ,  $p < .01$ ).

The seven television program variables were next submitted to a principal component factor analysis. The rotated factor loadings matrix is shown in Table 53.

Table 53

## Factor Analysis of Television Program Preferences for Primary Male Analytic Sample

TV Program Types	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Mystery	0.670	0.091	0.152
Drama	0.669	0.049	-0.199
Movie	0.509	-0.146	0.192
Music	0.064	0.678	-0.108
Sports	-0.179	0.674	0.340
Comedy	0.179	0.054	0.823
Talk	0.387	0.433	-0.390
Eigenvalue	1.422	1.089	1.053

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 1,352 respondents.

The first factor indicates highest loadings for mystery, drama, and movies. Music and sports shows load highest on the second factor and comedy on the third. This factor structure explains approximately 51% of the variance in preferences among types of TV shows. It suggests regular programming versus event programming as an underlying dimension of viewing preferences. The items loading on the first factor are generally shown during primetime while those loading on the second factor are shown primarily as special events.

As the next step in the scaling analysis, we constructed two summary variables. We counted positive responses to questions about regular viewing of mystery, drama, and movies. Scale reliability for the two summary variables was assessed by calculating the standardized item alpha on the basis of the correlation matrix for component and summary variables. Standardized item alphas for both Factor 1 ( $\alpha = .483$ ) and Factor 2 ( $\alpha = .106$ ) are insufficient to suggest reliable scales can be constructed from the variables with high loadings on the two factors, respectively.

Television programming preferences among heavy viewers. We hypothesized that clearer patterns of tastes in television programming might be evident in the preferences of heavy television viewers. After selecting respondents who watch more than the average number of television hours per week (regular network and cable TV  $M = 14.133$ ), the television program categories were again submitted to a principal component factor analysis. The resulting rotated factor matrix is shown in Table 54.

Table 54

## Factor Analysis of Television Program Preferences Among Heavy Viewers

TV Program Types	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Drama	0.694	0.207	-0.087
Mystery	0.682	0.069	0.281
Movie	0.524	-0.105	-0.107
Talk	0.206	0.715	-0.071
Music	0.075	0.672	0.049
Comedy	0.215	0.242	0.705
Sports	-0.263	0.229	0.696
Eigenvalue	1.434	1.110	1.061

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 783 respondents.

The factor structure, although somewhat different from the one resulting from an analysis of the full sample, did not produce large enough factor loadings to indicate reliable scales. The standardized item alpha for Factor 1, including mystery, drama, and movies, is .523; for Factor 2, including music and talk, .208; and for Factor 3, including sports and comedy, .304.

In summary, patterns of association and factor analytic results for the television program categories identified a three factor grouping structure that appeared intuitively reasonable. However, none of these factors proved strong enough to form a reliable scale of television preferences.

### Radio

We began the analysis of preferences in radio programming by examining the reported frequencies of regular listening to eight types of shows: news, classical music, pop, country and western, sports, talk, rock and roll, and easy listening. Among PMAS youth, 87.1% consider themselves regular radio listeners. The analysis of radio programming preferences was confined to this group. The proportions of regular listeners who monitor each of the program categories on a regular basis are shown in Table 55.



Table 55

Percentages of Regular Primary Male Analytic Sample Radio Listeners by Type of Radio Program

Radio Program Types	Percentage
Rock	82.1
Pop	59.4
News	53.9
Sports	51.8
Easy	43.9
Country/Western	31.0
Talk	18.6
Classical	16.4

Note. Percentages are weighted data based on 1,764 respondents.

Rock and roll (82.1%) is clearly the most popular type of programming among PMAS youth who listen to the radio. Pop music (59.4%), news (53.9%), and sports (51.8%) programs are also relatively popular among youth in this group while talk shows (18.6%) and classical music (16.4%) are preferred by relatively few.

Table 56 shows a matrix of Yule's Q statistics for the radio program categories. Two groupings suggest possible radio programming scales. The first cluster includes news, sports, and talk shows (News and sports:  $Q=.463$ ;  $\chi^2(1)=66.6$ ,  $p<.01$ ); News and talk: ( $Q=.600$ ;  $\chi^2(1)=63.6$ ,  $p<.01$ ); Sports and talk: ( $Q=.364$ ;  $\chi^2(1)=22.7$ ,  $p<.01$ )). Classical music is also strongly related to news ( $Q=.485$ ;  $\chi^2(1)=36.0$ ,  $p<.01$ ) but not to sports ( $Q=.059$ ;  $\chi^2(1)=0.5$ , ns). The second cluster contains classical music and easy listening ( $Q=.527$ ;  $\chi^2(1)=49.5$ ,  $p<.01$ ). Country and western, rock, and pop music are less strongly associated with the other categories.

Table 56

Associations Among Radio Program Types in Regular Listening by Primary Male Analytic Sample

Radio Program Types	Sports	News	Talk	Classical	Easy	Pop	Rock	Country
Sports	-	.463*	.364*	.059	.168*	.136*	-.100	.050
News		-	.600*	.485*	.231*	.217*	-.134	.187*
Talk			-	.484*	.349*	.180*	-.144	.104
Classical				-	.527*	.205*	-.314*	.154
Easy					-	.295*	-.212*	.282*
Pop						-	.239*	-.085
Rock							-	-.080
Country								-

Note. Yule's Q statistics are weighted data based on 1,764 respondents.

\* $p < .05$ .

The radio programming categories were then submitted to a principal component factor analysis. As can be seen in Table 57, the groupings inferred from examination of the associations reported in Table 56 continued in the factor analysis. A third grouping was added including pop and rock, both loading on the third factor.

Table 57

## Factor Analysis of Primary Male Analytic Sample Preferences in Radio Programming

Radio Program Types	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Sports	0.775	-0.141	0.024
News	0.711	0.182	-0.015
Talk	0.519	0.295	-0.025
Easy Listening	0.090	0.710	0.104
Classical	0.064	0.699	-0.089
Pop	0.078	0.332	0.749
Rock	-0.021	-0.278	0.689
Country/Western	0.115	0.287	-0.242
Eigenvalue	1.751	1.120	1.052

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 1,764 respondents.

Summary variables were then constructed for each of the three factors. The summary variable for Factor 1 consisted of news, sports, and talk shows; for Factor 2, responses to questions about classical and easy listening programs were summed, and for Factor 3, pop and rock music variables were included.

The reliability of the summary variables as scales was tested by calculating the standardized item alpha from the correlations of the component variables. For Factor 1, we obtained a standardized item alpha of .611; for Factor 2, one of .394, and, for Factor 3, one of .108. News, sports, and talk show radio programs cluster to form a reliable scale but the remaining two clusters do not scale reliably. One feature common to news, sports, and talk radio shows is that they provide verbal information as compared to the musical content of the remaining program types. The clustering of the variables suggests that some youth use radio as an informational medium, tuning in to learn about what is happening in the world. Future analyses will explore market segment differences in listening to this type of radio programming.

Radio programming preferences among heavy listeners. It was then hypothesized that there might be a difference in preferences depending on the amount of radio to which the respondent listens. A factor analysis was thus run on respondents whose reported consumption was greater than the PMAS mean (mean number of hours listening to AM and FM radio = 22.6). The rotated factor matrix is presented in Table 58.

Table 58

Factor Analysis of Radio Program Preferences Among Primary Male  
Analytic Sample Heavy Listeners

Radio Program Types	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Easy	0.697	0.054	-0.216
Classical	0.697	0.099	-0.029
Pop	0.546	0.110	0.542
News	0.136	0.744	-0.025
Sports	-0.064	0.722	-0.080
Talk	0.129	0.548	0.016
Rock	-0.047	-0.046	0.750
Country/Western	0.316	0.080	-0.497
Eigenvalue	1.751	1.145	1.081

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 704 respondents.

As may be seen from comparison of Table 57 with Table 58, some change in the rotated factor scores resulted from selecting the heavy listeners. The results, however, were basically in accordance with the original factor analysis. Standardized item alphas were computed for each of the three factors but none indicated a reliable scale. Thus, separate analysis of heavy listeners' responses adds no unique information.

In summary, preliminary analyses of associations among radio program types and factor analytic results suggested three possible groupings of programs that might form scales. However, only one of these groupings produced a reliable radio programming scale. News, sports, and talk shows cluster together suggesting that some youth use radio as an informational medium to learn about current world events.

#### Newspaper

The first step in the analysis of preferences among newspaper sections was to examine the frequency of response to questions about which sections the respondent frequently reads. As a whole, 92.9% of PMAS youth read the newspaper at least once a week, and thus were asked the newspaper preference questions. Table 59 shows the proportions of PMAS regular newspaper readers who read each section of the paper.

Table 59

Percentages of Primary Male Analytic Sample Regularly Reading Each Newspaper Section

Medium	Percentage
News	83.2
Sports	77.6
Local	75.8
Comics	65.7
Classified	62.1
Style	36.3
Food	11.1

Note. Percentages are weighted data based on 1,882 respondents.

Among regular readers it can be seen that five of the seven sections have a regular readership of over 60%, and that just over 10% of those asked acknowledge reading the food section on a regular basis.

Levels of association among newspaper sections were explored by calculating Yule's Q statistics from crosstabulations of the newspaper section variables. One major cluster was observed, as shown in Table 60, that included all of the newspaper sections except sports and comics (all relevant comparisons are statistically significant with  $p < .01$ ). Sports is related to news ( $Q = .272$ ;  $\chi^2(1) = 1207$ ,  $p < .01$ ), but not to any of the other variables, while the comics section was unrelated to any of the other sections.

Table 60

Associations Among Newspaper Sections in Regular Readership by Primary Male Analytic Sample

(Table entries are Yule's Qs)

Newspaper Sections	News	Local	Food	Style	Classifieds	Sports	Comics
News	-	.658*	.590*	.472*	.215*	.272*	-.039
Local		-	.439*	.321*	.361*	.106	-.052
Food			-	.604*	.341*	-.011	.097
Style				-	.259*	.127	.056
Classifieds					-	-.112	.078
Sports						-	.002
Comics							-

Note. Yule's Q statistics are weighted data based on 1,882 respondents.

\* $p < .05$

A principal component factor analysis was then run on the newspaper section variables. In this case, the single cluster shown in the association matrix was not replicated in the factor analysis. Instead, three separate factors were obtained. The first factor included the local and news sections, while the food and style sections loaded on the second, and the sports section showed the only high factor loading on the third factor. These groupings are shown in the rotated factor matrix in Table 61.

Table 61

Factor Analysis of Section Preferences Among Primary Male Analytic  
Sample Regular Newspaper Readers

Newspaper Section	<u>Rotated Factor Matrix</u>		
	Factor 1	Factor 2	Factor 3
Local	0.743	0.082	-0.071
News	0.728	0.090	0.146
Food	0.038	0.734	-0.075
Style	0.186	0.668	0.064
Sports	0.220	-0.105	0.801
Comics	-0.251	0.392	0.517
Classified	0.354	0.326	-0.337
Eigenvalue	1.587	1.062	1.033

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 1,882 respondents.

Local and news sections, the high-loading variables for Factor 1, were combined and tested for scale reliability. A standardized item alpha of .456 was found, considerably short of the conventional .600 acceptance level. Similarly, combining style and food sections, as suggested by Factor 2 loadings, resulted in a standardized item alpha of .361, and the combination of sports and comics suggested by Factor 3 loadings resulted in a standardized item alpha of .060. The groupings suggested by the factor analysis, then, did not produce statistically reliable scales for newspaper section preferences.

Newspaper section preferences among heavy readers. A factor analysis was then run on the newspaper section preferences of those PMAS youth who report reading the newspaper more than average (mean = 3.8 hours per week). The rotated factor matrix for these high-consumption youths can be seen in Table 62.

Table 62

## Factor Analysis of Newspaper Section Preferences Among PMAS Heavy Readers

Newspaper Section	<u>Rotated Factor Matrix</u>	
	Factor 1	Factor 2
Food	0.636	0.188
Style	0.632	0.229
Comics	-0.025	0.645
Sports	0.050	0.628
Classified	0.477	-0.148
Local	0.472	-0.413
News	0.432	-0.239
Eigenvalue	1.468	1.123

Note. Principal components, varimax rotation. Factor loadings are weighted data based on 826 respondents.

When focused solely upon those with above-average levels of consumption, there was some rearrangement of factors and factor components and one factor dropped out. Regardless of these realignments, the loadings on the factors do not imply any increase in reliability as tested by the standardized item alpha. The responses of heavy newspaper readers, then, are no more scalable than those of the entire sample.

In summary, scaling efforts for newspaper sections were fruitless. Groupings of sections indicated by preliminary tests of association and factor analysis were not supported by tests of scale reliability.

Magazines

Prior to analysis, the magazines that had been mentioned by respondents during their interviews were grouped into eight categories by subject matter. A list of the categories and the magazines included in each appears in Figure 21. The categorization scheme was adopted from the Army's Media Plan for 1987. This categorization scheme included only magazines in which the Army has advertised or will advertise during FY 86/87. Of the total of 1,783 responses coded during interviews, the coding scheme categorized 1,748 or 98%. A total of 2,599 responses were coded in all. Of these, 816 were mentions of magazines not included in the ACOMS interviewer code list. All 816 were coded "Other" and are not considered here. We found it necessary to drop two categories from this stage of the analysis. Audio magazines comprised only 20 of the coded responses, and science-oriented magazines were coded just 73 times. Thus, their inclusion in the analysis would not be expected to produce reliable results.



Our preliminary scaling efforts were directed toward identifying intramedium clustering of the magazine categories among regular magazine readers. Of PMAS youth, 62.4% are regular magazine readers. Our analyses were confined to this group of regular readers.

Interviewers could code up to six magazines for each respondent. Table 63 shows the number of magazines in each content category and the maximum number of magazines mentioned in each.

Table 63

Number of Magazines in Each Category and Maximum Number Mentioned

Magazine Categories	Number in Category	Maximum Number Mentioned
General Editorial	8	4
Sports	6	3
Outdoor	6	2
Auto	3	3
Influencers	2	2
Minority	3	2

Note. The minimum number mentioned was 0 in each category.

The percentages of regular readers of each magazine type are presented in Table 64. Clearly, general editorial (33.7%) and sports (32.7%) magazines are most popular with PMAS youth while magazines aimed at minorities (7.3%) and influencers (6.8%) are least popular among the full PMAS.

Table 64

Percentages of Primary Male Analytic Sample Regular Magazine Readers by Content Category

Magazine Categories	Percent
General Editorial	33.7
Sports	32.7
Auto	17.8
Outdoor	9.1
Minority	7.2
Influencers	6.8

Note. Percentages are weighted data based on 1,265 respondents.

Intra-medium clustering of magazine types was first explored by crosstabulating all possible pairs among the six categories. The matrix of Yule's Q statistics shown in Table 65 was observed.

Table 65

Yule's Qs for Magazine Category Pairs

Magazine Categories	Sports	Auto	Influencers	Outdoor	General Editorial	Minority
Sports	-	-.601*	-.199	-.105	.004	-.129
Auto		-	-.424	-.208	-.484*	-.649*
Influencers			-	-.153	.572*	-.497
Outdoor				-	-.491*	-1.000
General Editorial					-	-.047
Minority						-

Note. Yule's Q statistics are weighted data based on 1,265 respondents.

\* $p < .05$ .

The general pattern of negative associations suggests strong and mutually exclusive tastes in magazine content. The major exception is the positive association between influencer and general editorial content ( $Q = .572$ ;  $\chi^2(1) = 22.5$   $p < .01$ ). However, the standardized item alpha for the sum of these two content areas is only .280 indicating that they do not correlate highly enough to form a reliable scale. In summary, then, advertising in one content area will not likely overlap in terms of readership with other content areas, so that each content area should be targeted separately.

#### Preferences Across Media

The previous sections dealt with television, radio, newspapers, and magazines as discrete areas and the possibility of scales existing within each medium, ignoring the others. Intuitively, it also seems likely that reliable scales might be produced by combining responses to questions about regular monitoring of specific content areas across media such as sports and news.

The first hypothesized cross-media scale, sports interest, includes watching sports on television, listening to sports broadcasts on the radio, reading the sports section in the newspaper, and reading sports magazines. Yule's Q statistics were calculated to check the levels of association among sports-related media content. They are presented in Table 66.

Table 66

Cross-Media Associations in Regular Monitoring of Sports Content by  
Primary Male Analytic Sample

(Table entries are Yule's Qs)

Medium	TV Sports	Sports Radio	Sports Section	Sports Magazines
TV Sports	-	0.893*	0.941*	0.763*
Radio Sports		-	0.895*	0.655*
Sports Section			-	0.966*
Sports Magazines				-

Note. Yule's Q statistics are weighted data based on regular media monitors which vary across pairs.

\* $p < .05$ .

The levels of association are all quite high (all are statistically significant with  $p < .01$ ) suggesting the likelihood of a sports scale. This was confirmed by a standardized item alpha of .876, well above the .600 acceptance level.

The second hypothesized scale related to news-oriented media components and included radio news programs, news articles in the paper, and general editorial magazines. Yule's Qs for these variables are presented in Table 67. Although strong associations among these variables are indicated by the Yule's Q statistics (all three relationships are statistically significant with  $p < .01$ ), a reliability check obtained a standardized item alpha of .544, not high enough to indicate a reliable scale.

Table 67

## Associations Among News Monitoring Across Media

(Table entries are Yule's Qs)

Medium	Radios	News Monitoring Newspaper	Magazines
Radio News	-	0.638*	0.209*
Newspaper		-	0.567*
News Magazines			-

Note. Yule's Q statistics are weighted data based on regular media monitors which vary across pairs.

\* $p < .05$ .

We next constructed a Sports Scale variable, ranging from 0 to 4, by counting the media regularly monitored by respondents for sports content. Mean numbers of media are reported for PMAS youth by educational, regional, and age categories in Table 66. Clearly, youth appear to follow sports in an average of two of the four media. Significant differences in mean number of media monitored for sports were found for educational groups ( $F(4,65)=6.7$ ,  $p < .05$ ), and racial groups ( $F(4,65)=7.8$ ,  $p < .05$ ). Work-oriented high school students and high school graduates who are not currently enrolled in school appear lower than the other educational groups in mean number of media monitored for sports reports; Blacks appear to monitor more media on the average than the other racial groups. No significant differences were observed for regional, age, or ethnic groups.

Table 68 also shows the mean number of media monitored for news content (of radio, newspaper, and magazines) by educational, regional, and age segments. Although the combination of these variables does not produce a reliable scale, the means presented in Table 68 are interesting for comparative purposes.

Strong differences were observed in the mean number of media monitored for news among educational groups ( $F(4,65)=23.3$ ,  $p < .05$ ), regional groups ( $F(5,64)=3.4$ ,  $p < .05$ ), age groups ( $F(4,65)=11.8$ ,  $p < .05$ ), and racial groups ( $F(4,65)=5.4$ ,  $p < .05$ ). News interest appears to be partly a function of education with college freshmen and sophomores monitoring a higher average number of media for news and work-oriented high school students a lower average number than other educational groups. It also is related to age as 22- to 24-year-olds appear to monitor a higher average number of media than younger age groups.

Table 68

Mean Numbers of Media Regularly Monitored for Sports and News Content  
by Primary Male Analytic Sample (PMAS) Subgroups

PMAS Subgroups	Mean Number of Media Monitored	
	Sports <sup>a</sup>	News <sup>b</sup>
<u>Education</u>		
College Freshmen & Sophomores	2.0	1.7
College-Oriented High School Students	2.1	1.4
Work-Oriented High School Students	1.7	1.1
High School Graduates, Not Currently Enrolled	1.8	1.5
F(4,65)	6.7*	23.3*
<u>Brigade</u>		
1st Recruiting Brigade	2.0	1.6
2nd Recruiting Brigade	2.0	1.5
4th Recruiting Brigade	1.9	1.4
5th Recruiting Brigade	1.9	1.4
6th Recruiting Brigade	1.8	1.5
F(5,64)	0.7	3.4*
<u>Age</u>		
16- to 17-Year-Olds	2.0	1.3
18- to 19-Year-Olds	2.0	1.5
20- to 21-Year-Olds	1.8	1.4
22- to 24-Year-Olds	1.9	1.7
F(4,65)	1.0	11.8*
<u>Race</u>		
White	1.9	1.4
Black	2.3	1.7
Asian/Pacific Islander	1.7	1.9
Alaskan/American Native	2.4	1.1
F(4,65)	7.8*	5.4*
<u>Ethnicity</u>		
Hispanic	2.1	1.5
Non-Hispanic	1.9	1.4
F(2,67)	2.2	1.0
PMAS TOTAL	1.9	1.5

Note. Means are weighted data based on 2,026 respondents.

<sup>a</sup>Media include TV, radio, newspaper, magazines. <sup>b</sup>Media include radio, newspaper, magazines.

\*p<.05

In summary, two scales were formed and tested for reliability. Sports interest does tend to cross media with youth monitoring an average of about two of four media for sports. Youth monitor an average of one and one-half of three media for news. The reliable scale of cross-media sports interest indicates relatively large audience overlap across the four media. Additionally, there are market segment differences in mean number of media monitored for sports. These differences suggest that there is greater audience overlap across media for some groups than for others. Similarly, although the cross-media news variables do not form a reliable scale for the overall sample, there are strong subgroup differences indicating greater audience overlap across media for some subgroups than for others. Additional analysis is needed to determine if a reliable news scale can be constructed for these subgroups.

#### Conclusions and Future Analytic Directions

The first goal of these analyses, describing media monitoring patterns, has largely been achieved at the level of all PMAS youth. This report contains information concerning relative proportions of youth considering themselves regular viewers, listeners, or readers of various media. These are further broken down within medium into content categories. Additionally, we have information about the average number of hours each week spent monitoring each of the media. For example, we know that watching network television ranks third among media in proportion of youth who consider themselves regular viewers, but second in average number of weekly viewing hours. We also know that PMAS youth prefer comedy, movies, and sports programming to the other categories they were asked about. In future analyses, this descriptive picture will continue to grow as we look at each of these preference indicators by PMAS educational, regional, and age categories. For specific program content of radio and television, this information is currently available in the ACOMS Quarterly Report series (Gaertner, Nieva, Elig, & Benedict, 1988).

The second purpose of the media habits analysis is to provide scale summaries of the descriptive patterns for use in ACOMS models assessing the effectiveness of Army advertising. Toward this end, we first ascertained that a single scale of media habits cannot be produced for PMAS youth. For example, it might be hypothesized that the total number of hours youth spend monitoring media would influence their recall and perceptions of the Army. Our findings suggest that such a simple relationship does not exist. Subsequent analyses will therefore require exploring the relationships between the number of hours youth spend monitoring each separate medium and their recall and perceptions. We found that television viewing hours, including network, cable, and VCR, form a scale while the two types of radio, AM and FM, do not. Thus, in subsequent analyses, the Television Hours Scale will be used but the effects of AM radio will be analyzed separately from FM.

With only one exception, scaling of content categories was unsuccessful in producing reliable scales of intramedium tastes. This indicates that the categories are conceptually distinct from one another and that there is little predictable overlap in audiences from one type to another. Future analyses, therefore, will separately explore the relationships of each important content category to other parts of the model since they cannot be reliably combined.

The single exception to unsuccessful scaling of content categories was the Radio Information Scale that included radio news, sports, and talk shows. Future analyses will explore market segment differences in likelihood of youth to use radio to gain information about issues and events.

Two cross-media content scales were explored. Interest in sports appears to form a reliable scale across media though news shows do not. Market segment differences were found for both cross-media sports and news monitoring. These differences indicate differential levels of audience overlap across media for youth in different educational, regional, age, and racial categories. Future analyses will explore the question of audience overlap by market segment in greater detail.

In summary, we have provided a preliminary descriptive picture of media monitoring patterns among PMAS youth. We have also ascertained that, with the exception of the TV Hours Scale, the Radio Information Scale, and the Sports Scale, the media habits variables are distinct from each other and cannot be readily combined. While perhaps disappointing from a data reduction point of view, these findings are clear in their implications for future analyses. We will continue to explore, where appropriate, segment differences in patterns and tastes in media. We will also begin to use the individual media habits variables in conjunction with variables from other ACOMS modules, such as recall and perceptions, to find out how media preferences relate to the model of advertising effectiveness.

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## 7. EXPOSURE TO PROGRAMS FEATURING ARMY ADVERTISING

James B. Greenlees and Gregory H. Gaertner

### Overview

#### Requirement

To evaluate levels of and patterns in the viewing of programs and channels on which the Army advertises.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS), respondents were asked questions regarding whether they regularly watched or listened to five television programs, five cable stations, and five radio programs on which the Army advertises heavily. The analyses are based on responses to these questions by 2,026 16- to 24-year old males in the Army's primary enlisted recruiting market interviewed between October 1986 and June 1987.

The data are presented in two different ways. Analyses are presented for all youth responding to the media habits module. This has the advantage of enabling comparability of results across media, as there is only one subject population. The disadvantage of this approach is that, for those who do not regularly view a particular medium, zero values are assigned to each component of that medium, serving to artificially inflate correlations within each medium. Analyses are therefore also presented for regular viewers of each medium, enabling more accurate representation of relationships within media.

#### Results

There is wide variety in rates of regular viewing of programs featuring Army advertising. Some programs and channels reach nearly half of the prime recruiting market, while others reach less than 10%. Partly, these differences are a function of differences in viewing by medium. High rates of regular viewing were found for sports and sports-oriented programs or stations. The results suggest preferences for sports among some youth that extends across media. There are relatively weak or negative associations between radio and television (TV) program viewing.

Several distinctive age, regional, educational and ethnic patterns in monitoring particular programs and channels were discovered. Some radio programs deliver younger ages, some cable TV channels deliver Black youth viewers, and low viewing rates are in evidence in the West. For 7 of 10 commercial television and radio programs, college students and work-oriented high school students are at the opposite extremes in monitoring rates. For most of these shows, work-oriented high school students are relatively frequent viewers, college students less frequent. College-oriented high school

There are weak associations between viewing of particular programs and channels and recall of Army advertising. Further, there are weak associations between viewing particular programs and channels and recall of Army advertising source. The frequency of airing of Army television advertising and subsequent recall of television as a source of Army advertising is sufficiently strong that no one show can independently account for respondent exposure. By contrast, the relatively lesser weight and lower source recall for radio makes it possible for individual shows to make a difference in source recall and in some cases in recall of Army advertising. However, the main effective medium given the Army's advertising strategy is still television.

These findings raise issues for exposure measurement in ACOMS. The weak associations between program viewing and recall of Army advertising suggest that there are no acceptable measures of exposure to Army advertising that can be drawn from the ACOMS youth interviews. This suggests that caution should be used in assessing exposure with ACOMS.

### Introduction

This chapter summarizes analyses of patterns of listening to radio and viewing television programs by ACOMS respondents. The programs described are those on which the Army regularly advertises. Therefore, the size and targeting of their audiences may provide useful indices of exposure to Army advertising. The analyses contained in this chapter extend the previous analyses of media habits and recall of Army advertising, by linking media and program exposure to program exposure and recall.

The first analyses present levels of audience for various programs and channels as well as providing measures of the extent of overlap among program and channel audiences. Program viewing is then correlated with reported levels of consumption measured by hours per week spent viewing each medium. Further, levels of audience are reported by segment for each program/channel. Finally, viewing of programs is correlated with recall of Army advertising and recall of sources of advertising. The paper concludes with suggestions for further analyses.

### Data and Methods

The analysis reported in this chapter is based upon the 2,026 PMAS youth who were selected to be asked the ACOMS media habits questions. This constitutes approximately half of the 4,096 Primary Male Analytic Sample (PMAS) youth for the first three quarters of ACOMS data collection. PMAS youth are interviewed males between 16 and 24 years of age who have neither served nor been accepted for service in the military; who either are currently enrolled in high school or hold a high school diploma, and who have neither taken college Reserve Officers' Training Corps (ROTC) courses nor completed more than two years of college. The subsample for analysis in this chapter was drawn from interviews conducted between 13 October 1986 and 30 June 1987, the first three quarters of ACOMS data collection.

college Reserve Officers' Training Corps (ROTC) courses nor completed more than two years of college. The subsample for analysis in this chapter was drawn from interviews conducted between 13 October 1986 and 30 June 1987, the first three quarters of ACOMS data collection.

Measures. Respondents were asked whether they regularly viewed network television, cable television or regularly listened to radio. If so, they were asked how many hours they spent each week monitoring that medium. Youth who responded that they did regularly monitor network television, cable television, or radio and who responded that they monitored the medium more than zero hours in a week were asked whether they regularly watched or listened to five television programs, five cable stations, and/or five radio programs, respectively. (Beginning 1 July 1987, youth were asked about preferences whether or not they regularly monitor the medium.) Only respondents saying they spend no time monitoring a medium were excluded from preference questions. A listing of the programs, along with abbreviations used in all subsequent tables for each program, is presented in Table 69. Although the vehicles for cable television are technically stations as opposed to programs, for the most part each is characterized by a single format. Thus, they may be considered analogous to programs in the other two media, and will be treated as such in the remainder of this chapter.

Samples. We have no information on viewing preferences within a medium for respondents who reported not regularly viewing that medium (or who reported zero hours monitoring that medium). We considered two ways of handling their responses. First, we might assume that youth who do not monitor a medium are not regular viewers of any program or channel in the medium. This method facilitates examining differences in program preferences between media, as all comparisons utilize the same set of respondents. We can refer to this sample as providing data on the whole PMAS.

Examination of the data in this manner, however, poses problems when we discuss patterns of viewing within a medium, since not viewing a program may reflect either that the program is not preferred or that its medium is not viewed or not accessible. Of the 2025 youth asked the media habits questions, 262 (13%) reported they were not regular radio listeners, 674 (33%) reported they were not regular commercial television watchers, and 1111 (55%) reported they were not regular cable television watchers. Using the whole PMAS, we would assume that these respondents did not view any of the programs on the medium. Strong correlations between viewing one program and another might thus be a reflection not of monitoring both programs, but rather of not monitoring the medium and therefore neither program. This is frequently the case, and especially so for cable stations. The average correlation between monitoring one cable station and another is 0.341 for the PMAS but only 0.137 among regular cable viewers. For comparisons or associations of viewing within a medium it is frequently preferable to restrict the sample to regular viewers of the medium. This is accomplished by simply treating those who are not regular viewers as missing observations.

Table 69

Glossary of Exposure Programs and Name Abbreviations

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Television

Abbreviation

David Letterman	DL
Friday Night Videos	FNV
Monday Night Football	MNF
College Football	CF
Sunday Night at the Movies	SNM

Cable

MTV	MTV
The Nashville Network	TNN
ESPN Sports	ESPN
Turner Broadcasting System	TBS
Black Entertainment Network	BEN

Radio

American Top 40	AT40
King Biscuit Flower Hour	KB
Rick Dee's Top 40	RD40
Metalshop	M
Rockline	R

---

For these reasons, in this chapter, results are generally presented both for regular viewers and the PMAS as a whole. Comparisons between media use the PMAS sample, while discussion of results within a medium deal with regular viewers. The relevant discussions will make clear which population is being considered.

## Results

### Exposure Levels Within Medium

Table 70 presents the percentages of youths reporting that they watch or listen to each of the fifteen programs or cable stations for both the PMAS and regular viewers of the relevant medium. For the PMAS as a whole, no program or station is monitored by a majority of youth, although wide variations among programs are apparent. Popular shows include Monday Night Football (46.7% of PMAS are regular viewers) on television and American Top 40 (44.8%) on radio. In part these differences among programs are a function of media access and preference. A larger proportion of PMAS youth view the television programs on the average (31.0%) than the radio (25.7%) or cable (20.7%) programs.

This does not suggest that one medium is a better investment than another. While radio and commercial television programs are more popular than cable programs, some cable stations are more popular than some radio or commercial television programs. Further, we show presently that some programs with limited audiences efficiently target particular audiences of interest.

Examination of viewing patterns among regular viewers presents a slightly different picture. A number of programs/stations have monitoring rates by regular viewers of that medium in excess of 50%. Among commercial television programs, Monday Night Football has a reported viewing rate of 69.7% of regular television watchers and college football a viewing rate of 58.4%. For cable television, three of the five stations have viewing rates among regular cable viewers in excess of 50%. Leading these is ESPN (74.2%), followed by TBS (55.7%) and MTV (53.1%). American Top 40 is the only radio program with a reported listening rate over 50% (51.3%). The high number of cable stations with above 50% monitoring rates may be due in part to the fact that, as stations rather than programs, they are available over a far wider time frame than are programs. Thus, there are greater opportunities to watch cable television than there are to watch a specific television program or listen to a specific radio program, both of which are available during a restricted time frame.

Comparison of the columns for PMAS and for regular viewers in Table 70 helps illustrate the differential effect of including nonviewers in the analysis. Excluding nonviewers of the medium in all cases raises the percentage monitoring the program, but the effect differs by medium, with the differences generally larger for media less frequently accessible (e.g., cable).

Table 70

Percentage Viewing Programs Among Primary Male Analytic Sample (PMAS)  
Youth

Program/ Channel	Full PMAS			Regular Viewers	
	%	Regular Audience Estimate	Number Responding	%	Number Responding
TV:					
DL	19.7	1,989,642	2025	29.3	1351
FNV	20.6	2,081,573	2026	30.6	1352
MNF	46.7	4,718,906	2026	69.7	1352
CF	39.2	3,961,051	2026	58.4	1352
SNM	28.8	2,910,160	2026	42.9	1352
Average	31.0			46.1	
CABLE:					
MTV	24.4	2,465,552	2026	53.1	916
TNN	11.3	1,141,833	2026	24.6	916
ESPN	34.2	3,455,815	2026	74.2	916
TBS	25.6	2,584,285	2024	55.7	914
BEN	8.0	808,082	2025	17.5	915
Average	20.7			45.0	
RADIO:					
AT40	44.8	4,525,839	2025	51.3	764
KB	12.9	1,302,333	2024	14.8	763
RD40	31.6	3,189,333	2024	36.2	763
M	17.8	1,797,954	2025	20.4	764
R	21.7	2,191,594	2025	24.9	764
Average	25.7			29.5	

Note. Percentages are weighted data based on the number of respondents presented in the table.

See Table 69 for key to titles of programs and stations.

### Audience Overlap

Correlations in monitoring rates can help to assess overlaps in audience between programs. A positive correlation in viewing for two programs is evidence that viewers of one program or station tend to view the other, so that advertising in both programs builds frequency of exposure. A negative correlation would indicate that those who view one program tend not to view the other, and advertising on both tends to build reach.

Intercorrelations of viewing of the programs/channels are contained in Table 71. The top matrix is for the PMAS as a whole, and the bottom matrix is restricted to regular viewers/listeners. Thus, in the bottom matrix, cells within a medium are restricted to regular viewers of the medium, and cells crossing media are restricted to regular viewers of both media.

The interrelations among radio programs (the last five rows and columns in each matrix) do not differ much whether the full sample or regular listeners are considered. This is reasonable since a vast majority of PMAS count themselves regular radio listeners. The strongest relationship among regular radio listeners is between American Top 40 and Rick Dee's Top 40, ( $r=.451$ ,  $p<.05$ ), probably accounted for by the similarity in format. King Biscuit Flower Hour, Metalshop, and Rockline appear to have highly overlapping audiences with an average correlation above .3 (all significant at  $p<.05$ ).

Monday Night Football and college football also have highly overlapping audiences among regular television viewers ( $r=.471$ ,  $p<.05$ ), as do ESPN and TBS among regular cable viewers ( $r=.306$ ,  $p<.05$ ). These correlations support the existence of a "Sport" factor suggested in this report's chapter on media habits (Keil, Greenlees, & Gaertner, 1988). These four programs or stations have the highest reported monitoring rates and relatively strong intercorrelations with each other within their respective media.

The upper matrix of intercorrelations in Table 71 can be used to assess audience overlap across media. The most comprehensive of these patterns exists between ESPN, TBS, Monday Night Football, and college football. As reported earlier, high correlations exist between Monday Night and college football (0.471 among regular television viewers), and ESPN and TBS (0.280 among regular viewers;  $p<.05$ ). Further, youth who watch ESPN also tend to watch college football (0.474 in the total PMAS;  $p<.05$ ) and Monday Night Football (0.492 in the total PMAS;  $p<.05$ ). In part, these correlations reflect the fact that those who tend not to watch commercial television tend not to watch cable, but even among regular viewers of both media, the correlations are substantial ( $r=.309$  and .308,  $p<.05$ , respectively). The intercorrelations for "purely" sport programming (ESPN and the two football programs) for the PMAS average 0.54 (0.36 among regular viewers, both significant at  $p<.05$ ).

Table 71  
Intercorrelations of Program Viewing Among Primary Male Analytic Sample (PHAS) (Cell Entries are Pearson's r's)

	DL	FNV	HNF	CF	SNH	MTV	TNN	ESPN	TBS	BEN	AT40	KB	RD40	M	R
DL	---														
FNV	.10*	---													
HNF	.28*	.28*	---												
CF	.28*	.26*	.66*	---											
SNH	.11*	.32*	.28*	.23*	---										
MTV	.22*	.21*	.30*	.29*	.12*	---									
TNN	.07*	.13*	.14*	.17*	.10*	.27*	---								
ESPN	.23*	.17*	.49*	.47*	.10*	.54*	.39*	---							
TBS	.18*	.09*	.34*	.21*	.11*	.65*	.29*	.63*	---						
BEN	.05*	.24*	.20*	.21*	.16*	.22*	.15*	.29*	.24*	---					
AT40	-.01*	.19*	.10*	.08*	.14*	.06*	.10*	.04*	.01*	.10*	---				
KB	.07*	-.02*	.01*	-.00*	.02*	.00*	.01*	-.00*	-.01*	-.01*	.03*	---			
RD40	-.00*	.17*	.07*	.05*	.14*	.07*	-.01*	-.01*	-.01*	.03*	.49*	-.04*	---		
M	.11*	.06*	.06*	.02*	.01*	.14*	.02*	.06*	.04*	.00*	.00*	.33*	.05*	---	
R	.10*	.08*	.06*	.02*	.08*	.07*	.01*	.04*	.00*	.00*	.06*	.29*	.06*	.40*	---

Note. Correlations are weighted data based on 2,024 respondents.

(table continues)

<sup>a</sup>See Table 6) for key to titles of programs and stations.



Table 71  
Intercorrelations of Program Viewers Among Regular Viewers (Cell Entries are Pearson's r's) (continued)

	DL	FNV	MNF	CF	SNM	MTV	TNN	ESPN	TBS	BEN	AT40	KB	RD40	M	R
DL	---														
FNV	.023	---													
MNF	.087*	.075	---												
CF	.120*	.080*	.471*	---											
SNM	.042	.192*	.017	.020	---										
MTV	.109*	.141*	.013	.043	.017	---									
TNN	.036	.067	.078	.007	.040	.051	---								
ESPN	.061	.012	.308*	.309*	.088	.130*	.165*	---							
TBS	.029	.067	.083	.059	.014	.098	.068	.280*	---						
BEN	.039	.244*	.094	.118*	.157*	.032	.032	.081*	.052	---					
AT40	.069	.225*	.035	.021	.155*	.036	.101	.017	.027	.134*	---				
KB	.127*	.012	.079*	.028	.064	.032	.015	.004	.000	.025	.090	---			
RD40	.028	.209*	.056	.024	.178*	.137*	.051	.042	.018	.050	.451*	.087	---		
M	.162*	.084*	.108*	.038	.030	.220*	.009	.047	.039	.021	.059	.315*	.009	---	
R	.146*	.109*	.090*	.032	.129*	.126*	.004	.062	.006	.012	.009	.271*	.016	.380*	---

Contrasting with the positive associations discussed above are the almost uniformly near-zero correlations between radio and television programs. By implication, there appears to be minimal connection between television and radio audiences. In addition, the weak association between MTV viewing and listening to radio programs suggests that music videos cannot be considered logical extensions of radio. More generally, the Army's strategy of reaching light television viewers through radio seems well founded.

Among regular viewers/listeners, patterns in taste become more pronounced. For example, among those who are both regular television watchers and radio listeners, there is a pattern of positive relationships between MTV viewing and listening to Rick Dees' Top 40 (.137), Metalshop (.220,  $p < .05$ ) and Rockline (.126,  $p < .05$ ).

The larger correlations within media using the PMAS as opposed to regular viewers seem the result of including non-viewers, so that there are more cases of respondents monitoring neither program. This may be seen in the average intercorrelation within each medium. For commercial television, the intercorrelation drops from 0.285 for the PMAS to .027 among regular viewers. Likewise, the average intercorrelation for cable drops from 0.351 to 0.099. Radio shows the smallest decrease, from 0.164 to 0.117, since 87% of the PMAS are radio listeners.

#### Monitoring by Market Segment

Table 72 displays monitoring levels by education, brigade, age, race and ethnicity for all youth asked media habits questions. Race and Hispanic ethnicity are determined by responses to two questions. Respondents were asked "Do you consider yourself White, Black, Asian or Pacific Islander, American Indian or Alaskan Native?" White and Black ethnicities were determined using this response. Then youth were asked "Are you Hispanic?" Responses to this question determined Hispanic ethnicity. Thus, respondents might be categorized as either White or Black by the first question and Hispanic by the second, with categories for the two questions overlapping. The first results of interest are the uniformly high levels of monitoring for ESPN and Monday Night Football. More than 28% of the surveyed PMAS youth in all segments view ESPN. Monday Night Football also has a high viewing rate in most segments, with the lowest reported rate of viewing being 38.6% among 20- to 21-year-olds.

There are significant differences in program viewing by education group for three of the television shows, two of the cable stations, and four of the radio programs. College students and work-oriented high school students are at the opposite extremes in monitoring rates for all of the significant commercial television and radio program differences. Usually, work-oriented high school students are more likely to be regular viewers, but for David Letterman and King Biscuit Flower Hour, college students are most likely to watch or listen regularly. College-oriented high school students tend to fall midway

Table 72

Percentage Regularly Viewing Programs and Channels for Market Segments of Primary Male Analytic Sample (PMAS) Youth

Market Segments	Commercial Television					Minimum Number Responding
	DL	FNV	MNF	CF	SNM	
College Freshmen & Sophomores	26.6	12.5	45.0	39.9	18.5	390
HS College-Oriented	20.1	25.8	52.2	42.6	29.9	783
HS Work-Oriented	10.0	33.8	49.3	36.5	36.7	202
HS Grads Not Enrolled	17.5	18.3	43.1	36.8	31.9	650
$\chi^2(3)$	14.7*	27.8*	7.4	3.2	18.6*	
1st Rctg Bde	20.9	15.0	48.6	33.4	26.7	442
2nd Rctg Bde	20.0	25.3	45.6	40.7	32.6	385
4th Rctg Bde	19.9	19.0	46.2	40.2	27.5	563
5th Rctg Bde	21.4	25.6	52.4	47.7	33.7	350
6th Rctg Bde	15.1	17.6	39.7	33.0	22.3	281
$\chi^2(4)$	3.2	13.2*	1.8	14.0*	9.1	
16-17 years old	20.0	28.0	51.9	42.0	32.3	845
18-19 years old	20.2	16.3	44.4	38.0	21.2	548
20-21 years old	17.2	17.2	38.6	31.7	25.2	307
22-24 years old	20.5	18.2	49.5	43.1	36.3	322
$\chi^2(3)$	1.1	18.6*	11.6*	8.5*	19.8*	
White	20.6	16.3	45.5	36.4	27.0	1713
Black	14.4	37.2	54.8	51.5	37.4	219
Other	25.2	47.2	42.7	51.2	34.5	64
$\chi^2(2)$	4.3	59.3*	5.4	16.7*	8.5*	
Hispanic - Yes	24.2	24.6	44.8	38.7	31.9	235
Hispanic - No	19.2	20.1	47.0	39.2	28.5	1779
$\chi^2(1)$	1.8	1.4	0.2	0.0	0.6	

(table continues)

Note: Percentages are weighted data based on the number of respondents presented in the table.

See Table 69 for key to titles of programs and stations.

\*p<.05.

Table 72

Percentage Regularly Viewing Programs and Channels for Market Segments of Primary Male Analytic Sample (PMAS) Youth (continued)

Market Segments	Cable Television					Minimum Number Responding
	MTV	TNN	ESPN	TBS	BEN	
College Freshmen & Sophomores	24.7	6.6	30.1	22.5	7.3	390
HS College-Oriented	29.2	9.1	36.7	28.4	8.1	783
HS Work-Oriented	24.1	11.9	28.6	20.5	11.2	202
HS Grads Not Enrolled	20.7	15.3	35.5	26.2	7.7	650
$\chi^2(3)$	8.0*	14.8*	4.5	4.1	1.6	
1st Rctg Bde	25.5	6.2	33.4	20.3	5.6	442
2nd Rctg Bde	25.0	18.5	38.2	33.3	10.1	385
4th Rctg Bde	20.7	7.9	28.9	23.8	4.8	563
5th Rctg Bde	26.6	16.2	36.6	28.6	9.2	350
6th Rctg Bde	24.4	7.2	33.8	21.2	11.4	281
$\chi^2(4)$	2.7	31.2*	5.6	15.0*	10.5*	
16-17 years old	29.9	9.0	35.7	28.5	7.8	845
18-19 years old	23.5	8.2	31.7	22.8	7.5	548
20-21 years old	23.5	15.9	34.0	23.2	8.9	307
22-24 years old	18.6	14.3	35.1	27.1	8.2	322
$\chi^2(3)$	11.0*	12.2*	1.4	4.0	1.4	
White	24.8	11.2	33.7	25.9	3.6	1713
Black	19.8	9.9	35.4	26.3	32.1	219
Other	40.2	21.1	43.3	20.0	8.6	64
$\chi^2(2)$	8.2*	4.7	1.9	0.8	160.4*	
Hispanic - Yes	23.6	13.1	31.4	21.0	7.6	235
Hispanic - No	24.4	11.0	34.4	26.1	8.1	1779
$\chi^2(1)$	0.0	0.5	0.5	1.5	0.0	

\*p&lt;.05.

(table continues)

Table 72

Percentage Regularly Viewing Programs and Channels for Market Segments of Primary Male Analytic Sample (PMAS) Youth (continued)

Market Segments	Radio					Minimum Number Responding
	AT40	KB	RD40	M	R	
College Freshmen & Sophomores	32.3	16.3	22.4	10.7	22.5	390
HS College-Oriented	51.8	8.6	40.2	19.4	19.7	783
HS Work-Oriented	52.8	6.9	41.6	29.2	27.8	202
HS Grads Not Enrolled	44.6	15.5	28.2	18.1	21.6	650
$\chi^2(3)$	25.5*	14.3*	28.9*	17.7*	3.0	
1st Rctg Bde	39.2	20.1	25.6	20.4	23.8	442
2nd Rctg Bde	56.3	10.8	40.0	16.3	23.6	385
4th Rctg Bde	45.1	12.4	29.5	14.8	24.4	563
5th Rctg Bde	47.3	12.1	34.7	24.2	20.8	350
6th Rctg Bde	33.5	7.9	27.8	12.4	14.2	281
$\chi^2(4)$	27.0*	17.1*	15.3*	13.4*	8.6	
16-17 years old	49.8	7.7	40.0	22.3	22.5	845
18-19 years old	42.9	14.2	32.3	18.0	21.1	548
20-21 years old	43.4	14.0	26.8	15.0	24.1	307
22-24 years old	41.4	17.7	23.3	13.5	19.3	322
$\chi^2(3)$	5.6	14.9*	22.7*	9.7*	1.9	
White	44.2	14.8	31.3	19.6	23.6	1713
Black	45.4	4.8	33.2	8.9	12.1	219
Other	50.2	6.7	29.9	16.2	19.9	64
$\chi^2(2)$	0.7	16.3*	0.3	11.4*	11.5*	
Hispanic - Yes	44.6	15.0	35.7	22.7	26.4	235
Hispanic - No	44.9	12.6	31.2	17.1	21.1	1779
$\chi^2(1)$	0.0	0.6	1.0	2.4	1.8	

\* $p < .05$ .

between these extremes. These differences in program preferences suggest that different advertising and placement strategies may be necessary when advertising to these different categories.

There are significant regional differences in monitoring rates for three of the television shows, three of the cable stations, and four radio stations. Regional monitoring levels are generally lower for the West (6th Recruiting Brigade) and the Midwest (4th Recruiting Brigade) while other differences are slight. These results parallel those found in the analysis of recall of Army advertising, where we found a consistent pattern of low and diffuse recall in the West.

There are significant differences by age group for four of five television shows, two of five cable stations, and three of five radio programs. Many programs show a U-shaped age distribution of audience; that is, relatively high rates of viewing in 16- to 19- and 22- to 24-year old groups. However, viewing rates for MTV, Rick Dee's Top 40, and Metalshop tend to decrease as respondents get older. MTV shows a steady decline in viewing, from a high of almost 30% among 16- to 17-year olds to less than 19% among 22- to 24-year olds. Likewise, Rick Dee's Top 40 shows a steady drop in viewing from 40% to slightly over 23% over the same span, while Metalshop declines from over 23% to 13.5%. These trends are not surprising given the negative correlations found between age and viewership for the three shows (correlations of -.103, -.137, and -.092, respectively  $p < .05$ .)

Differences by race and Hispanic ethnicity are generally weaker than those observed above with one notable exception. Black Entertainment Network (BEN), although exhibiting the lowest overall monitoring rate (8.0%) is extremely well-targeted for its main audience of Black youth. Among Blacks, BEN viewing has one of the highest nonsports viewing rates (32.1%).

Table 73 reproduces Table 72 using regular viewers only. As may be seen, monitoring rates are substantially higher for all programs across all categories. When limited to regular viewers, BEN shows the second highest monitoring rate (68.5%) among non-sport cable stations across all market segments. The only cable station with a higher rate is TBS in the Southeast (2nd Recruiting Brigade), with a monitoring rate of 70.3. This is perhaps not surprising, as the Southeast also shows high monitoring of BEN (21.4%), indicating a possibly substantial overlap in audience.

A second item of interest concerns the viewing patterns of Hispanics. When compared to Whites and Blacks, Hispanics show higher viewing levels for 9 of 15 programs. While it has already been noted that the Hispanic category substantially overlaps White and Black designations, the results are notable, and further research might be warranted in this area.

A final note deals with the changing patterns of monitoring with age. While MTV, American Top 40, Rick Dee's Top 40, and Metalshop show the same declining patterns among regular viewers as was found for the PMAS, they are joined by Friday Night Videos, which declines

Table 73

Percentage Monitoring Programs and Stations by Market Segments of  
Primary Male Analytic Sample (PMAS) Youth Regular Viewers

Market Segments	Commercial Television					Minimum Number Responding
	DL	FNV	MNF	CF	SNM	
College Freshmen & Sophomores	44.6	21.0	75.7	66.9	31.0	231
HS College-Oriented	28.3	36.3	73.4	59.8	42.0	559
HS Work-Oriented	14.2	48.1	70.0	51.8	52.2	142
HS Grads Not Enrolled	25.9	27.2	63.9	54.5	47.3	419
$\chi^2(3)$	26.2*	21.6*	9.3*	7.9*	13.6*	
1st Rctg Bde	33.2	23.7	77.0	53.0	42.4	289
2nd Rctg Bde	29.2	36.9	66.3	59.2	47.4	268
4th Rctg Bde	29.8	28.5	69.4	60.3	41.2	363
5th Rctg Bde	28.9	34.5	70.7	64.4	45.4	255
6th Rctg Bde	24.2	28.2	63.8	52.9	35.7	176
$\chi^2(4)$	2.7	8.6	7.0	6.2	4.6	
16-17 years old	27.8	38.9	72.1	58.3	44.8	603
18-19 years old	33.5	26.9	73.6	62.9	35.1	328
20-21 years old	26.4	26.4	59.0	48.5	38.6	191
22-24 years old	29.4	26.1	70.9	68.1	52.0	229
$\chi^2(3)$	2.5	12.8*	10.2*	8.4*	12.4*	
White	31.1	24.6	68.8	55.1	40.8	1130
Black	20.6	53.0	78.2	73.5	53.4	159
Other	32.4	60.6	54.9	65.8	44.3	46
$\chi^2(2)$	5.4	39.7*	4.3	14.2*	6.6*	
Hispanic - Yes	41.2	41.9	76.3	65.9	54.2	143
Hispanic - No	28.2	29.5	68.9	57.5	41.8	1203
$\chi^2(1)$	5.4*	4.8*	1.7	1.9	4.2*	

(table continues)

Note: See Table 69 for key to titles of programs and stations.

\*p < .05.

Table 73

Percentage Monitoring Programs and Stations by Market Segments of  
Primary Male Analytic Sample (PMAS) Youth Regular Viewers (continued)

Market Segments	Cable Television					Minimum Number Responding
	MTV	TNN	ESPN	TBS	BEN	
College Freshmen & Sophomores	60.1	16.2	73.4	54.9	17.8	168
HS College- Oriented	60.0	18.7	75.3	58.2	16.7	381
HS Work- Oriented	56.1	27.7	66.6	47.7	26.1	86
HS Grads Not Enrolled	43.9	32.4	75.2	55.6	16.4	280
$\chi^2(3)$	12.8*	14.6*	1.5	1.5	2.3	
1st Rctg Bde	58.0	14.0	75.9	46.4	12.7	198
2nd Rctg Bde	52.8	39.0	80.6	70.3	21.4	178
4th Rctg Bde	47.7	18.2	66.6	54.8	11.1	241
5th Rctg Bde	53.0	32.2	72.7	56.8	18.3	173
6th Rctg Bde	54.1	16.0	75.0	47.1	25.3	124
$\chi^2(4)$	2.4	29.0*	6.1	16.6*	9.6*	
16-17 years old	62.2	18.7	74.3	59.2	16.3	401
18-19 years old	54.8	19.1	73.8	53.0	17.4	235
20-21 years old	52.2	35.4	75.6	51.9	19.8	123
22-24 years old	39.1	29.9	73.6	56.9	17.3	154
$\chi^2(3)$	15.6*	13.7*	0.1	1.9	0.5	
White	53.7	24.3	73.2	56.3	7.8	773
Black	42.2	21.2	75.6	56.0	68.5	108
Other	83.0	43.6	89.3	41.3	17.7	26
$\chi^2(2)$	3.6	0.4	0.2	0.0	174.1*	
Hispanic = Yes	60.0	33.2	79.8	53.4	19.3	96
Hispanic = No	52.3	23.5	73.7	55.9	17.3	813
$\chi^2(1)$	1.0	2.2	0.9	0.1	0.1	

\*p &lt; .05.

(table continues)



Table 73

Percentage Monitoring Programs and Stations by Market Segments of  
Primary Male Analytic Sample (PMAS) Youth Regular Viewers (continued)

Market Segments	Radio					Minimum Number Responding
	AT40	KB	RD40	M	R	
College Freshmen & Sophomores	37.4	18.8	26.0	12.4	26	337
HS College-Oriented	59.9	9.9	46.5	22.4	22.8	678
HS Work-Oriented	63.5	8.3	50.0	35.2	33.5	169
HS Grads Not Enrolled	50.1	17.4	31.6	20.3	24.3	578
$\chi^2(3)$	30.8*	13.4*	34.1*	19.8*	4.0	
1st Rctg Bde	44.5	22.8	29.0	23.1	26.9	389
2nd Rctg Bde	62.2	11.9	44.2	18.0	26.0	343
4th Rctg Bde	53.1	14.6	34.8	17.4	28.7	484
5th Rctg Bde	55.1	14.1	40.4	28.2	24.2	306
6th Rctg Ele	38.7	9.1	32.0	14.3	16.4	239
$\chi^2(4)$	26.9*	17.0*	14.3*	14.1*	8.7	
16-17 years old	58.3	9.0	46.8	26.2	26.4	726
18-19 years old	49.2	16.3	37.1	20.6	24.3	480
20-21 years old	48.6	15.7	30.0	16.8	27.0	273
22-24 years old	46.8	20.0	26.4	15.3	21.8	283
$\chi^2(3)$	9.1*	13.9*	28.3*	11.8*	2.1	
White	50.2	16.8	35.5	22.2	26.8	1500
Black	54.4	5.7	39.7	10.7	14.5	184
Other	58.7	7.8	35.0	18.9	23.2	55
$\chi^2(2)$	0.8	11.8*	0.9	10.1*	10.0*	
Hispanic - Yes	50.4	17.0	40.4	25.7	29.9	206
Hispanic - No	51.5	14.5	35.8	19.6	24.2	1548
$\chi^2(1)$	0.0	0.5	0.9	2.2	1.7	

\*p < .05.

from almost 39% among 16- to 17-year-olds to just above 26% among 22- to 24-year-olds. This pattern of declining monitoring of "popular music" with age might warrant further examination.

#### Program Monitoring and Recall of Army Advertising

One potential use of the program audience data collected in the youth interviews is as a measure of exposure to Army advertising. That is, to the extent that the Army's advertising is concentrated in the programs and channels queried, youth viewing these programs and channels should have comparatively high levels of Army advertising exposure. One test of this logic is available in the relationship between exposure to these programs and recall of Army advertising.

As reported in the chapter on recall of Army advertising (Gaertner and Greenlees, 1988), Army ad recall is divided into three levels:

- (1) No Recall: Respondent did not mention Army advertising and could not recall ads for the Army when asked directly.
- (2) Aided Recall: Youth responded positively when asked whether he had seen or heard advertising for the Army; and
- (3) Unaided Recall: Respondent offered the Army when asked whether he recalled having seen or heard military advertising.

Table 74 contains the percentages of PMAS youth able to recall Army ads unaided among those who regularly view these programs and channels and among those that do not.

The difference in unaided recall between those viewing and not viewing a particular program or channel is a rough measure of the capacity of that program or channel to induce recall of Army advertising, independent of whatever else the respondent has seen. As the differences in the last column of the table suggest, few television programs or channels have such a capacity. The differences in recall between viewers and nonviewers are generally not significant. However, viewing of TNN and TBS among cable stations, and Metalshop among radio programs, is significantly associated with recall of Army advertising.

While it might be tempting to argue from the foregoing that advertising on radio programs and cable television is more effective than on network television programs, this interpretation is somewhat simplistic as shown in Table 75.

Table 74

Percentage with Unaided Recall of Army Advertising Among Primary Male Analytic Sample (PMAS) Who Do and Do Not Regularly View Programs

Percent Recalling Army Advertising Unaided	Among PMAS					
	Who Do Not Regularly Monitor Program/ Channel	n	Who Regularly Monitor Program/ Channel	n	Difference	$\chi^2(1)$
1) DL	82.8	1353	84.6	339	1.8	0.4
2) FNV	83.1	1347	83.4	346	0.3	0.0
3) MNF	81.9	878	84.6	815	2.7	1.4
4) CF	82.7	1029	83.9	664	1.2	0.3
5) SNM	83.3	1201	82.8	492	-0.5	0.0
6) MTV	82.3	1253	85.7	440	3.4	1.7
7) TNN	82.5	1527	88.0	166	5.5	2.5
8) ESPN	82.1	1132	85.3	561	3.2	1.9
9) TBS	82.0	1256	86.5	435	4.5	3.2
10) BEN	83.1	1573	83.6	119	0.5	0.0
11) AT40	83.1	909	83.2	783	0.1	0.0
12) KB	82.6	1489	86.4	202	3.8	1.5
13) RD40	83.5	1106	82.3	585	-1.2	0.3
14) M	82.0	1349	88.4	343	6.4	5.0
15) R	83.3	1296	82.6	396	-0.7	0.1

Note. Percentages are weighted data based on number of respondents presented in n columns in table.

See Table 69 for key to titles of programs and stations.

\* $p < .05$ .

Table 75

Percentages Recalling Army Advertising in a Medium Among Those Regularly Viewing Programs/Channels

Percent Recalling Army Advertising Unaided	Among PMAS					
	Who Do Not Regularly Monitor Program/ Channel	<u>n</u>	Who Regularly Monitor Program/ Channel	<u>n</u>	Difference	$\chi^2(1)$
1) DL	94.9	1489	98.7	383	3.8	6.1*
2) FNV	95.8	1486	95.2	387	-0.6	0.1
3) MNF	94.7	971	96.8	902	2.1	2.9
4) CF	95.0	1130	96.7	743	1.7	2.0
5) SNM	95.1	1317	97.0	556	1.9	1.9
6) MTV	95.0	1390	97.7	483	2.7	3.5
7) TNN	95.6	1693	96.7	180	1.1	0.3
8) ESPN	95.3	1244	96.4	629	1.1	0.9
9) TBS	95.6	1396	95.8	475	0.2	0.0
10) BEN	95.9	1739	93.1	133	-2.8	1.6*
11) AT40	61.5	647	68.0	622	6.5	5.2*
12) KB	63.1	1096	73.2	172	10.1	5.7*
13) RD40	61.8	805	70.5	464	8.7	8.3*
14) M	62.5	987	73.3	281	10.8	8.4*
15) R	60.6	901	78.0	367	17.4	25.8*

Note. Percentages are weighted data based on number of respondents presented in n columns in table.

See Table 69 for key to titles of programs and stations.

\* $p < .05$ .

Table 75 contains the percentage recalling advertising in a medium first among those who regularly viewed the various programs in that medium and then among those who did not. For the first ten shows and channels, the medium is television; for the last five, it is radio.

The first ten differences, for television shows and channels, are generally small and usually not significant. Whether or not respondents view any particular television show or cable channel featuring Army advertising, the recall of television as a source of Army advertising is extremely likely. This is sensible, in that the Army has directed so much advertising to television for so long a period that no single show can probably make much difference in the recall of that medium or in recall of Army advertising.

By contrast, in radio, where Army advertising is comparatively light, individual shows can make a difference. Thus, those who listen to Rockline are far more likely to recall radio Army advertising (78.0%) than those who do not (60.6%), a difference of 17.4% ( $\chi^2(2)=25.8$ ,  $p<.05$ ). Here, where advertising weight is less, the vehicles individually are more distinctive. In television, where advertising weight is heavier, each show is less distinctive, but the overall level of source recall is much higher.

Thus, the findings of this chapter are consistent with findings in the chapter on recall of Army advertising that television as a source is more effective in producing unaided recall than radio. The overall levels of source recall of television are very high and closely associated with recall of Army advertising. However, precisely because of this, no particular show can boost recall of Army advertising much. Radio's overall levels of source recall are lower, and radio source recall overall is less closely associated with recall of Army advertising. Because of this, however, individual radio shows can be distinctively effective in producing recall.

The implications of these findings for the measurement of exposure to Army advertising and the assessment of advertising effectiveness are discussed in this chapter's summary.

#### Summary and Discussion

This chapter reported on rates of viewing programs featuring advertising for the Army among PMAS youth. These programs and channels included five commercial television programs, five cable television stations, and five radio programs. For these programs and channels, we assessed levels of and patterns in viewing within and across media, and examined differences in viewing by market segment. Since some differences in viewership of particular programs reflected differences in access and preference for media, analyses were conducted using both all youth asked the media habits questions and regular viewers of the medium. The analysis went on to assess relationships between the program viewing and recall of Army advertising and recall of sources of Army advertising.

In summary, we found large differences in the popularity of the various programs and channels on which the Army advertises heavily. These differences are partly a function of media access/preference. Beyond this there are high viewing rates for sport or sports-oriented programs. The results offer support for the "Sports" factor proposed by the chapter on media habits (Keil, Greenlees, & Gaertner, 1988).

There are distinctive age, regional and ethnic patterns in viewing particular programs and channels (some radio programs deliver younger ages, some cable TV channels deliver Black youth viewers, and low viewing rates in the Far West). College students tend to have very different tastes in programming from work-oriented high school students with college-oriented high school students tending to fall midway between these extremes.

Finally, we found that there are generally weak associations between viewing of particular programs and channels and recall of Army advertising. There are also weak associations between viewing particular programs and channels and recall of Army advertising source.

The latter two findings can be summarized comparatively easily. The weight of Army television advertising and subsequent recall of television as a source of Army advertising is sufficiently strong that no show can independently account for respondent exposure. By contrast, the relatively lesser weight and lower source recall for radio makes it possible for individual shows to make a difference in source recall and in some cases in recall of Army advertising.

These findings raise issues for exposure measurement in ACOMS. The weak associations between program viewing and recall of Army advertising suggest that there are no acceptable measures of exposure to Army advertising available in the ACOMS youth interviews. There is, however, evidence in the ACOMS Quarterly Reports (Gaertner, Nieva, Elig, & Benedict, 1988) that particular themes advertised heavily during a quarter are associated (at least in time) with changes in perceptions of youth in the aggregate. Data available in the ACOMS interviews do not allow us to infer that youth exposed to particular themes have more favorable perceptions, however.

Additional research directions suggested by the current paper are to further investigate the relationships between exposure to specific programs and channels and perceptions of the Army, and with subsequent variables in the model (intentions, behaviors, and knowledge).

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## 8. RECALL OF ARMY ADVERTISING

Gregory H. Gaertner and James B. Greenlees

### Overview

#### Requirement

To assess levels of and patterns in the recall of Army and other services' advertising overall and in key market segments and to provide preliminary assessments of the effectiveness of Army and other services' advertising.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS), respondents were asked questions regarding their recall of Army and other military advertising as well as recall of the source of advertising and perceptions of the Army and other military services. The analyses are based on responses to these questions by 4,096 16- to 24-year-old males in the Army's primary enlisted recruiting market interviewed between October 1986 and June 1987.

#### Results

Overall recall. The Army's advertising has been effective in producing high levels of top-of-mind awareness compared with other services measured in terms of aided and unaided recall. However, recall of Reserve Officers' Training Program (ROTC), Army Reserve (USAR) and Army National Guard (ARNG) advertising is less. Levels of advertising recall are surprisingly consistent across educational, regional, age and ethnic groups. Some differences indicate lower recall among the work-oriented, youth in the 6th Recruiting Brigade (Far West), and older youth.

Recall and perceptions. Recall of active Army advertising is associated with favorable perceptions of the active Army, most strongly for messages which are prominent in active Army advertising, less strongly for messages less heavily emphasized (emphasis measured in terms of the message content analyses conducted under ACOMS). More generally, service-specific and component-specific advertising recall is associated with positive perceptions of the service or component advertised, and especially for messages apparently receiving high emphasis.

Recall of advertising sources. There are strong differences in source recall. Television and magazine advertising are recalled more frequently and tend to be associated with unaided rather than aided recall. However, focused print advertising (e.g., direct mail, posters, pamphlets) seems better able to effectively target age and educational groups of interest than broadcast advertising.



Patterns of recall by service and component. Respondents who recall advertising for any active service are likely to recall advertising for all active services. Further, respondents who recall advertising for any of the Army ROTC, USAR, or ARNG are likely to recall advertising for all of them.

Conclusions and directions for future research. The general finding that "top-of-mind" awareness of advertising results in favorable perceptions for the most heavily emphasized attributes is backed by systematic evidence only for Army advertising. Some content analysis of other service advertising might provide a more systematic basis for this finding.

The capacity of focused print advertising to target desired market segments can be analyzed in terms of additional market segments. It is possible, for example, that key ROTC, USAR, and ARNG market segments (perhaps defined differently than those used here) can be effectively targeted by using focused print advertising. Additional research can also be directed to the comparatively low levels of active Army ad and source recall observed in the Far West.

#### Utilization

This report provides information useful to Army policymakers in evaluating the effectiveness of Army and other services, advertising and in assessing the combined effects of service-specific and joint advertising programs.

#### Introduction

This chapter presents analyses of the recall of Army and other services' advertising. The analyses bear on the effectiveness of Army advertising in two different ways. First, recall is, in itself, an indicator of the impact of advertising since it represents "top-of-mind" awareness (Fishbein and Ajzen, 1975). Second, to the extent that recall is associated with favorable perceptions of the product advertised, the Fishbein and Ajzen's hierarchy of effects model suggests a positive impact of advertising. Both of these assessments of advertising effectiveness are conducted in this chapter.

We begin this chapter by describing the levels of recall of active Army, ARNG, USAR, ROTC and other services' advertising, both overall and in key market segments of interest. We then present levels of recall of sources of Army advertising, both overall and in key market segments. Relationships between advertising recall and recall of advertising source are then presented in order to assess the efficacy of various kinds of advertising in eliciting recall. We examine correlations among levels of recall of various Army components' advertising to determine patterns of Army ad recognition. Levels of recall of services and Army component advertising are correlated with perceptions of the respective services and components as a preliminary assessment of the attitudinal effects of military advertising. Finally, we summarize the results of our recall assessments and discuss future research directions.

## Method

### Sample

The analyses presented in this chapter are based on the Primary Male Analytic Sample (PMAS) of 4,096 youth interviewed between October 86 and June 87 during the first three quarters of ACOMS data collection. The PMAS is a subsample of the youth interviewed for ACOMS consisting of males in the continental United States between the ages of 16 and 24 who have not served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college ROTC course; and who have not yet completed their sophomore year in college. All results are reported on the data set weighted to represent a cross-section of American 16- to 24-year-olds. Numbers of respondents are also reported in tables of results.

### Procedure

ACOMS youth respondents were asked the question, "Thinking about all forms of advertising, for which military services do you recall seeing or hearing advertising?" Responses were categorized in terms of Air Force, Army, ROTC, National Guard, Reserve, Coast Guard, Marine Corps, Navy, and one ad for all services. As many responses were coded as were offered by the respondent. Only when the respondent could recall no military advertising was none recorded. Respondents mentioning ROTC, Reserve or National Guard were asked, "For which military service or services was this advertising?" Those respondents who answered, "Army", were scored as recalling the Army ROTC, Reserve or Guard. The set of variables created in this fashion represent measures of unaided recall, since the respondent was not asked directly whether or not he recalled advertising for a particular service.

### Aided Recall

Aided recall was assessed by asking whether the respondent recalled advertising for a particular component or service. This was operationalized by asking for each Army component or other service which was not recalled unaided, "Do you recall seeing or hearing any advertising for [the component/service]?" Services were queried in the order of Air Force, Army, Army ROTC, Army National Guard, Army Reserve, Coast Guard, Marine Corps, Navy, and all services in one ad. The first service asked was rotated so that all services/components had an equal chance of being asked early in the order to minimize order effects. Aided recall was not ascertained for Reserve components of other services.

Respondents who recalled seeing an Army advertisement (or the advertising of any Army component) were also asked whether they saw or heard the advertisement on television, on radio, in magazines, in

newspapers, on billboards, through the main, on posters, in brochures or pamphlets or in the Yellow pages. Youth answered yes or no for each.

### Results

The questions on advertising recall allow us to classify respondents in one of three categories for each service or component. The categories are:

- (1) Unaided Recall: Respondent offered the name of the service/component when asked whether he recalled having seen military advertising;
- (2) Aided Recall: Youth responded positively when asked whether he had seen advertising for this service/component (although he did not offer the response unaided); and
- (3) No Recall: Respondent did not offer the name of a component or service and could not recall ads for that service/component when asked directly.

The categories can be ordered in terms of level of recall, such that unaided recall implies more awareness than aided recall, and aided recall implies more awareness than no recall.

Table 76 contains the percentage of PMAS having each level of recall of advertising for the active Army, ARNG, USAR, ROTC and other services. Recall of active Army advertising is extremely widespread. When asked whether they have seen any military advertising, 83.5% of PMAS responded that they had seen Army advertising. An additional 10.5% responded that they had seen Army advertising in the past year when asked directly. Other services' levels of unaided recall are much lower (between 60% and 66%), and combined aided and unaided recall levels are lower than those of the Army.

Recall of USAR, ARNG, and Army ROTC advertising is far less than recall of advertising for the active Army and other services. For example, 54.5% of PMAS youth had no recollection of ROTC advertising, 27.0% had no recall of USAR advertising, and 33.1% had no recall of ARNG advertising. Further, unaided recall of ROTC advertising was offered by only 2.7%, and only 11.3% recalled USAR advertising unaided.

The manner in which the questions on recall of ROTC and Army Reserve and National Guard advertising were asked allowed us to test brand recognition among service-specific ROTC and Reserve components. The results suggest that the recall of Army ROTC and Reserve components predominates among services. For example, among those remembering advertising for the Reserve without prompting, 93.0% further recalled the advertising was for the Army Reserve, while only 23.7% recalled Air Force Reserve, 18.8% Navy Reserve, and 14.2 % the Marine Corps Reserve. Of those recalling National Guard advertising, 81% recalled Army National Guard, and 25.8% recalled the Air National

Table 76

Percentage of Primary Male Analytic Sample with No Recall, Aided and Unaided Recall of Military Advertising by Service and Component

	Army	Reserve Officers' Training Corps (ROTC)	U.S. Army Reserve (USAR)	Army National Guard (ARNG)
No Recall	6.0	54.5	27.0	33.1
Aided Recall	10.5	42.8	61.6	52.2
Unaided Recall	83.5	2.7	11.3	14.7

	U.S. Air Force (USAF)	U.S. Marine Corps (USMC)	U.S. Navy (USN)
No Recall	12.2	13.8	17.9
Aided Recall	21.9	20.0	21.3
Unaided Recall	65.9	66.2	60.6

Note. Percentages are weighted data based on 4,096 respondents.

Guard. Finally, for ROTC, 86.9% recalled Army ROTC advertising, 24.4% recalled Air Force ROTC, and 29.4% recalled Navy ROTC.

#### Recall by Market Segment

Table 77 contains the percentages of ACOMS youth respondents in key market segments reporting no recall of advertising for the various components and services, aided recall, or unaided recall. The segments are: (a) education, (b) recruiting brigade (Rctg Bde), (c) age, and (d) ethnicity. With the exception of the ethnic breakdowns, the market groups are defined as in the ACOMS Quarterly Reports (Gaertner, Nieva, Elig, & Benedict, 1988). Ethnic breakdowns of recall are not presented in the ACOMS Quarterly Reports, owing to the small quarterly totals for non-White ethnic groups. To aid interpretation, most comparisons focus on unaided recall.

High levels of recall for Army advertising are found across the educational groupings. There are, however, significant differences in recall of Army advertising by education group ( $\chi^2(6)=15.7$ ,  $p<.05$ ). In fact, there are significant differences in recall for all services. Unaided recall of military advertising is generally lowest among the work-oriented, and highest in college-oriented and college freshmen and sophomores. Further, the comparatively lower levels of recall (both aided and unaided) of ROTC, USAR, and ARNG advertising are present for all educational groups.

Differences in recall by brigade are generally weaker than those by education. There are significant differences by brigade in recall of ROTC ( $\chi^2(8)=16.8$ ,  $p<.05$ ) and ARNG ( $\chi^2(8)=17.0$ ,  $p<.05$ ) advertising; Brigades 5 and 6 have comparatively low recall in these cases. The patterns are similar for other services and components, although the other brigade differences fall short of statistical significance.

There are significant age differences in recall of active Army advertising. Younger groups are more likely to have unaided recall of Army advertising ( $\chi^2(6)=14.1$ ,  $p<.05$ ). In fact, significant negative associations between age and recall are found for all Active services. However, age is not significantly associated with recall of advertising for the Army ROTC, Army Reserve or Army National Guard. This may reflect these components' efforts to target an older audience in their advertising.

Finally, there are generally weak racial and ethnic differences in recall of military advertising. There are no significant racial or ethnic differences in recall of active Army or ROTC advertising, implying that "top-of-mind" awareness of active Army and ROTC advertising is about equally high among Whites, Blacks, and other racial groups and between Hispanics and non-Hispanics. There are, however, significant racial differences in recall of Army Reserve ( $\chi^2(4)=11.7$ ,  $p<.05$ ), and Marine ( $\chi^2(4)=16.2$ ,  $p<.05$ ). In all cases, Black youth have lower levels of recall than White youth. There are also significantly lower levels of recall of USAR ( $\chi^2(2)=8.4$ ,  $p<.05$ ) advertising among Hispanics.

Table 77

Percentage of Primary Male Analytic Sample with No Recall, Aided and Unaided Recall of Military Advertising by Service and Component by Market Segments

Education		ARMY	ROTC	USAR	ARNG	USAF	USMC	NAVY	Number of Respondents
College Freshmen & Sophomores	No recall:	8.4	45.1	27.8	34.9	12.2	10.4	16.4	771
	Aided recall:	8.9	51.6	57.2	50.0	16.6	20.0	18.2	
	Unaided recall:	82.8	3.3	15.0	15.1	71.2	69.7	65.5	
HS College-Oriented	No recall:	4.1	55.6	27.0	33.1	10.6	13.5	14.3	1574
	Aided recall:	10.5	41.1	62.4	53.3	20.6	17.8	21.7	
	Unaided recall:	85.4	3.4	10.6	13.7	68.8	68.7	64.0	
HS Work-Oriented	No recall:	8.6	53.9	30.0	38.2	15.5	19.5	20.4	419
	Aided recall:	11.7	44.7	61.6	50.5	23.2	21.4	20.4	
	Unaided recall:	79.6	1.4	8.4	11.4	61.3	59.1	59.2	
HS Grads Not Enrolled	No recall:	5.6	58.9	26.1	31.2	12.8	14.7	21.0	1332
	Aided recall:	11.2	39.1	63.4	52.9	25.5	21.5	22.9	
	Unaided recall:	83.2	2.0	10.6	15.9	61.7	63.8	56.1	
	$\chi^2(6)$ :	15.7*	29.0*	11.5	6.8	24.5*	17.9*	23.4*	

(table continues)

Note. Percentages are weighted data based on 4,096 respondents.

ROTC: Reserve Officers' Training Corps; USAR: U.S. Army Reserve; USAF: U.S. Air Force; USMC: U.S. Marine Corps.

\*Hispanic group overlaps with White and Black groups.

\* $p < .05$ .

Table 77

Percentage of PMAS with No Recall, Aided and Unaided Recall of Military Advertising by Service and Component by Market Segments (continued)

Brigade		ARMY	ROTC	USAR	ARNG	USAF	USMC	NAVY	Number of Respondents
1st	No recall:	5.6	52.4	24.0	32.9	10.4	12.4	13.2	912
	Aided recall:	10.0	44.8	63.2	51.7	22.2	18.0	20.2	
	Unaided recall:	84.5	2.7	12.8	15.4	67.5	69.6	66.6	
2nd	No recall:	4.7	52.2	26.2	26.2	10.9	12.1	20.7	732
	Aided recall:	9.8	43.8	63.3	58.8	20.8	21.2	20.2	
	Unaided recall:	85.5	3.9	10.4	15.0	68.3	66.7	59.1	
4th	No recall:	6.2	51.4	27.9	33.2	14.3	14.8	16.6	1196
	Aided recall:	10.6	46.4	60.0	51.4	19.9	21.3	22.4	
	Unaided recall:	83.2	2.2	12.5	15.4	65.8	63.9	60.0	
5th	No recall:	5.5	59.9	29.4	37.0	10.2	12.7	19.4	672
	Aided recall:	13.4	38.6	60.2	48.8	23.4	20.3	20.6	
	Unaided recall:	81.1	1.5	10.4	14.2	66.3	67.0	60.0	
6th	No recall:	8.4	58.5	28.1	37.1	15.4	17.5	21.2	584
	Aided recall:	8.8	38.4	62.1	50.0	23.9	19.1	21.8	
	Unaided recall:	82.8	3.2	9.8	12.9	60.7	63.4	56.9	
	$\chi^2(8)$ :	11.9	16.8*	7.1	17.0*	14.8	11.2	19.6*	

(table continues)

Table 77

Percentage of PHAS with No Recall, Aided and Unaided Recall of Military Advertising by Service and Component by Market Segments (continued)

Age		ARMY	ROTC	USAR	ARNG	USAF	USMC	NAVY	Number of Respondents
16-17	No recall:	4.6	54.2	27.1	33.6	11.5	15.6	15.9	1729
	Aided recall:	9.8	42.7	61.7	52.3	20.6	18.6	21.1	
	Unaided recall:	85.6	3.1	11.1	14.1	68.0	65.8	62.9	
18-19	No recall:	5.9	52.0	26.1	34.1	12.1	11.7	15.4	1056
	Aided recall:	10.0	45.4	60.4	50.5	19.6	19.8	19.2	
	Unaided recall:	84.1	2.6	13.5	15.4	68.3	68.5	65.4	
20-21	No recall:	7.1	58.0	28.4	32.8	13.4	15.1	22.6	624
	Aided recall:	8.8	39.2	62.1	55.1	20.6	16.6	19.2	
	Unaided recall:	84.1	2.8	9.5	12.1	66.0	68.3	58.2	
22-24	No recall:	7.3	55.2	26.9	31.6	12.5	12.7	19.8	687
	Aided recall:	13.4	42.9	62.5	51.6	27.3	24.9	25.6	
	Unaided recall:	79.3	2.0	10.6	16.8	60.2	62.4	54.6	
	$\chi^2(6)$ :	14.1*	5.5	4.7	5.6	15.7*	17.9*	26.2*	*

(table continues)



Table 77

Percentage of Primary Male Analytic Sample with No Recall, Aided and Unaided Recall of Military Advertising by Service and Component by Market Segments (continued)

		ARMY	ROTC	USAR	ARNG	USAF	USMC	NAVY	Number of Respondents
<u>Race</u>	No recall:	5.9	54.4	26.9	30.0	12.0	13.3	17.6	
	Aided recall:	10.4	42.2	59.2	47.0	21.5	20.0	20.7	3510
	Unaided recall:	83.7	3.4	13.8	23.0	66.5	66.7	61.7	
Black	No recall:	6.4	52.6	22.6	30.8	13.8	13.7	19.5	
	Aided recall:	11.6	42.7	66.5	48.5	23.5	22.2	24.5	404
	Unaided recall:	82.1	5.6	10.9	20.7	62.7	64.1	56.0	
Other	No recall:	7.1	50.6	31.1	45.1	10.5	24.4	18.1	
	Aided recall:	10.6	47.0	64.6	47.0	21.2	13.0	21.2	134
	Unaided recall:	32.3	2.4	4.3	7.9	68.2	62.6	60.7	
	$\chi^2(4)$ :	1.1	2.7	11.7*	7.7	3.0	16.2*	5.2	*
<u>Ethnicity</u>									
Hispanic <sup>a</sup>	No recall:	7.9	59.0	34.9	35.9	13.0	15.8	18.1	
	Aided recall:	10.6	38.2	52.0	45.1	26.4	21.8	25.6	461
	Unaided recall:	81.5	2.8	13.1	19.0	60.6	62.4	56.3	
Non-Hispanic	No recall:	5.8	54.1	26.2	32.6	12.2	13.6	17.9	
	Aided recall:	10.5	43.2	62.5	52.6	21.3	19.8	20.8	
	Unaided recall:	83.7	2.7	11.3	14.9	66.5	66.5	61.3	
	$\chi^2(2)$ :	1.7	2.5	8.4*	2.6	3.9*	1.8	3.4	*

In summary, then, Army advertising exhibits high levels of unaided recall in all educational groups, brigades, ages, and races and ethnicities, although there are significant differences by education and age. Since recall of other services' advertising is generally more variable, a lower level of penetration by other services' advertising may be in evidence.

#### Recall of Advertising Medium

Youth who recalled Army advertising (aided or unaided) were also asked if they recalled seeing or hearing such advertising in a number of different media. This question set was asked only of those who recalled advertising for any Army component, and did not ask the respondent to differentiate among components. The questions were not asked with respect to other services' advertising. Table 78 presents the percentages of PMAS youth recalling various sources of Army advertising they had seen and heard in the previous year.

The most frequently remembered source of advertising is television, recalled by 95.6% of PMAS youth. TV is followed by magazines (84.3%) as the second most frequently mentioned source of Army advertising. The next best remembered source is recruiting posters (71.2%), followed by mail (68.7%), pamphlets (68.2%), billboards (66.7%), radio (63.1%), newspaper (29.6%) and the telephone yellow pages (11.1%). The comparatively low level of radio advertising recall is somewhat surprising. We return to this point presently.

#### Recall of Advertising Medium by Market Segments

Table 79 contains percentages of PMAS youth recalling an Army advertising source in terms of respondent market groups of interest for those respondents who could recall any Army advertising, either unaided or aided.

The rank orders of source recall are similar for each of the educational groups. Television is the predominant source of recall and magazine advertising is second. However, the effects of targeted direct mail and other advertising become clearer when respondents are analyzed by subgroup. There are significant differences among education groups for recall of military advertising in magazines ( $\chi^2(3)=18.2$ ,  $p<.05$ ), newspapers ( $\chi^2(3)=18.5$ ,  $p<.05$ ), direct mail ( $\chi^2(3)=47.4$ ,  $p<.05$ ), posters ( $\chi^2(3)=22.7$ ,  $p<.05$ ), and pamphlets ( $\chi^2(3)=31.5$ ,  $p<.05$ ). Among college freshmen and sophomores, 80.8% recall direct mail advertising (probably from their senior year in high school), compared with about 65% of other PMAS youth. Among high school students (both college- and work-oriented), relatively high levels exist for poster advertising. Again, recall of radio advertising is moderate.

There are also significant differences in source recall by recruiting brigade for newspapers ( $\chi^2(4)=12.0$ ,  $p<.05$ ), billboards ( $\chi^2(4)=19.4$ ,  $p<.05$ ), direct mail ( $\chi^2(4)=28.1$ ,  $p<.05$ ), pamphlets ( $\chi^2(4)=16.4$ ,  $p<.05$ ) and yellow pages ( $\chi^2(4)=27.2$ ,  $p<.05$ ). Youth in

Table 78

Percentage Identifying Source of Army Advertising Among Primary Male Analytic Sample with Aided or Unaided Recall of Any Army Advertising

Source	Percent
TV	95.9
Magazines	84.3
Poster	71.2
Mail	68.7
Pamphlets	68.2
Billboard	66.7
Radio	63.1
Newspaper	29.6
Yellow Pages	11.1

Note. Percentages are weighted data based on 4,096 respondents.

Minimum Number Responding=3,949.

Table 79

Percent Identifying Source of Army Advertising Among Primary Male Analytic Sample Market Segments for Those with Aided or Unaided Recall of Any Army Advertising

	TV	Radio	Magazine	News- paper	Bill- board	Mail	Posters	Pamphlet	Yellow Pages	Minimum Number Responding
<b>PHAS</b>										
College Fr. Soph.	95.9	63.5	85.7	28.7	65.3	80.8	69.8	71.6	8.5	741
HS College-Oriented	96.4	61.2	87.8	24.6	63.9	65.2	74.6	73.4	10.5	1528
HS Work-Oriented	95.9	59.1	85.2	29.4	70.0	61.8	81.3	70.7	14.4	394
HS Grads Not Enrolled	95.6	65.1	80.6	34.0	69.1	66.3	67.2	61.8	12.2	1290
$\chi^2$ (3)	0.6	4.3	18.2*	18.5*	6.6	47.4*	22.7*	31.5*	7.2	
<b>Brigade</b>										
1st	97.2	64.3	87.2	30.6	67.5	66.7	73.2	68.8	6.4	884
2nd	95.3	67.4	84.4	34.3	72.4	65.0	73.8	71.6	15.4	702
4th	96.3	62.0	83.6	27.8	67.2	75.2	70.7	69.7	9.9	1156
5th	95.6	62.4	83.2	30.5	66.6	72.6	69.2	69.4	14.4	647
6th	94.8	58.5	82.6	24.2	58.5	61.7	68.0	59.9	10.4	556
$\chi^2$ (4)	4.4	8.3	5.0	12.0*	19.4*	28.1*	5.7	16.4*	27.2*	

Note. Percentages are weighted data based on 4,096 respondents.

<sup>a</sup>Hispanic overlaps with White and Black; see text.

\* $p < .05$ .

(table continues)

Table 79

Percent Identifying Source of Army Advertising Among Primary Male Analytic Sample Market Segments for Those with Aided or Unaided Recall of Any Army Advertising (continued)

	TV	Radio	Magazine	News- paper	Bill- board	Mail	Posters	Pamphlet	Yellow Pages	Minimum Number Responding
<u>Age</u>										
16-17	96.6	60.5	87.1	24.9	64.6	60.8	75.2	73.6	9.9	1666
18-19	95.6	62.4	87.2	30.8	65.6	85.2	73.9	74.1	11.3	1019
20-21	96.7	67.6	83.0	32.5	68.2	74.8	68.2	68.3	10.5	597
22-24	94.7	63.9	78.1	32.6	69.9	56.1	64.6	53.8	13.0	666
$\chi^2$ (3)	4.0	6.5	26.2*	13.3*	5.1	156.6*	23.2*	76.9*	3.4	
<u>Race</u>										
White	95.9	62.7	83.7	26.3	65.2	68.7	70.2	67.0	9.2	3384
Black	95.3	69.1	87.5	45.6	78.2	71.4	79.7	77.6	21.8	394
Other	99.1	45.7	87.1	38.9	60.1	58.8	58.6	59.5	12.2	124
$\chi^2$ (2)	2.7	17.3*	3.6	56.3*	24.0*	5.4	19.9*	18.6*	47.6*	
<u>Ethnicity<sup>a</sup></u>										
Hispanic - Yes	94.1	62.0	84.5	34.3	64.8	73.6	79.2	67.9	12.3	437
Hispanic - No	96.1	63.2	84.3	29.1	66.9	68.3	70.3	68.3	11.0	3493
$\chi^2$ (1)	2.3	0.1	0.0	2.9	0.4	2.9	8.3*	0.0	0.4	

( $\chi^2(4)=16.4$ ,  $p<.05$ ) and yellow pages ( $\chi^2(4)=27.2$ ,  $p<.05$ ). Youth in the 6th Recruiting Brigade have lower recall of direct mail, pamphlets, and billboards than other youth. In part, this might be explained by the fact that California does not release lists of students for use by recruiters, possibly reducing the use of direct mail, pamphlets and posters. As reported in Table 77, PMAS in the 6th Recruiting Brigade region had generally lower levels of recall overall. Although Table 79 is limited to those who recalled Army advertising (thus, the source attributions would not necessarily be less for the 6th Brigade), the pattern of both low and diffuse recall in the Far West seems consistent.

The capacity of advertising to produce top-of-mind awareness in targeted segments is reflected in the differences by age group. Thus, recall of sources generally tends to be highest among the key younger groups. However, some media are better able than others to target prospect markets. Significant age differences are found for direct mail advertising recall ( $\chi^2(3)=156.6$ ,  $p<.05$ ). More than 85% of 18- to 19-year-olds recall direct mail advertising, compared to 56% of 22- to 24-year-olds and 61% of 16- to 17-year-olds. Similar significant age differences are found for posters ( $\chi^2(3)=23.2$ ,  $p<.05$ ), pamphlets ( $\chi^2(3)=76.9$ ,  $p<.05$ ) and magazines ( $\chi^2(3)=26.2$ ,  $p<.05$ ).

Other media seem to be less reliably targeted to the key younger market segments. For example, both billboards ( $\chi^2(3)=5.1$ , n.s.) and radio ( $\chi^2(3)=6.5$ , n.s.) advertising are generally recalled equally by all age groups. Magazine advertising, in spite of its relatively uncontrolled distribution, seems to target young age groups reasonably well, owing possibly to efficient media buying patterns ( $\chi^2(3)=26.2$ ,  $p<.05$ ).

There are few ethnic differences in source recall of broadcast media. However, Black youth are more likely to recall radio ( $\chi^2(2)=17.3$ ,  $p<.05$ ), newspaper ( $\chi^2(2)=56.3$ ,  $p<.05$ ), billboard ( $\chi^2(2)=24.0$ ,  $p<.05$ ), poster ( $\chi^2(2)=19.9$ ,  $p<.05$ ), pamphlet ( $\chi^2(2)=18.6$ ,  $p<.05$ ), and yellow pages ( $\chi^2(2)=47.6$ ,  $p<.05$ ) Army advertising than White youth. One potential explanation for some of these differences may be stronger high school recruiting presence in minority areas, or urban areas.

#### Relationships Among Levels of Advertising Recall

Interrelationships among levels of recall, particularly of components within a service, can be used to assess brand image. To the extent that recognition of one component's advertising is closely linked to recall of other components, there is evidence that recognition of one component's advertising supports recognition of other components' advertisements and indirectly a brand image. Table 80 contains these intercorrelations among levels of advertising recall for Army components and other military advertising. The variables are scored as '0' for no recall, '1' for aided recall, and '2' for unaided recall. The order of services and components in rows and columns reflects the clustering of the correlations.

Table 80

Intercorrelations of Levels of Recall of Advertising for Services and Components Among Primary Male Analytic Sample

	1	2	3	4	5	6	7	8
1) Army	--	.251	.253	.248	.046	.092	.197	.219
2) Air Force		--	.351	.340	.044	.112	.200	.222
3) Marine Corps			--	.334	.060	.120	.225	.213
4) Navy				--	.003	.113	.198	.206
6) Reserve Officers' Training Corps						--	.148	.224
7) Army National Guard							--	.303
8) Army Reserve								--

Note. Correlations are weighted data based on 4,096 respondents. Recall is scored as 0 = no recall, 1 = aided recall, and 2 = unaided recall. (Number Responding = 4,096) (Cell Entries are Pearson's r's)

\* $p < .05$ .

The recall levels of service-specific advertising are fairly strongly interrelated. Respondents who recalled Air Force advertising, for example, also tended to recall Marine and Navy advertising, and to a lesser extent, Army advertising. This brand image for military advertising as a whole does not extend to advertising for "all services in one ad."

A second cluster of advertising recall appears to include the Army ROTC, USAR and ARNG. There are relatively high levels of intercorrelation for recall of Reserve and National Guard advertising, and to a lesser extent, both of these with ROTC advertising. In this respect a brand image of Army components is supported. The results do not, however, support a strong brand image for Army advertising. If a strong brand image were in evidence, recall of Army advertising would be closely linked to recall of Army ROTC, Army Reserve, and Army National Guard advertising. In fact, the results suggest that recall of ROTC, USAR, and ARNG advertising is about equally associated with recall of any service-specific advertising.

A factor analysis of this correlation matrix, contained in Table 81, supports this clustering service and component advertising recall levels. Two factors were extracted using principal components. The first extracted factor (Eigenvalue = 2.42) corresponds to the recall of service-specific advertising. The second extracted factor (Eigenvalue = 1.13) corresponds to ROTC, Army Reserve and Army National Guard advertising.

#### Effects of Recall on Perceptions of Services

One measure of the effectiveness of advertising relates levels of recall of advertising to perceptions of the product. In this case, whether the respondent recalled service- or component-specific advertising can be correlated with the respondent's perceptions of that service. To the extent that recall is closely associated with positive perception, it is plausible to argue that the advertising has had a positive effect on the perception.

A strictly causal interpretation is not entirely warranted. First, it may be that respondents are more likely to recall messages with which they agree. This would argue that perception actually leads to recall. However, several studies have shown a modest or no association between recall of a message and attitude toward the message (Edwards, 1941; Jones & Aneshansel, 1975; Brigham & Cook, 1969; Malpass, 1969, as cited in Fishbein and Ajzen, 1975). Second, it may be that certain kinds of respondents are more likely both to recall Army advertising and to be favorable to the Army offer. For example, youth with strong intentions to enlist might be both sensitive to Army advertising and favorable to the Army's offers. We will take up this interpretation in subsequent reports. Nonetheless, an association between recall and perception provides reasonable preliminary evidence of advertising effectiveness.

Table 82 contains the percentages of PMAS youth agreeing or strongly agreeing that the Army offers the set of 14 benefits drawn



Table 81

Factor Analysis of Levels of Recall of Services and Components Among  
Primary Male Analytic Sample

	Rotated Factor Matrix	
	Factor 1	Factor 2
Active Army	.562	.145
Air Force	.698	.075
Marine Corps (USMC)	.684	.113
Navy (USN)	.713	.014
Reserve Officers' Training Corps (ROTC)	.082	.588
Army National Guard (ARNG)	.352	.503
Army Reserve (USAR)	.325	.618
Eigenvalue	2.360	1.107

Note. Factor loadings are based on weighted data from 4,096 respondents.

Principal components, varimax rotation. (Number Responding = 4,096)

Table 82

Percent Agree or Strongly Agree that the Army Offers Attributes Across Levels of Army Ad Recall

Attribute	Among Primary Male Analytic Sample with:			(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall		
Percent "Agree or Strongly Agree" that Army offers...					
1) a wide variety of opportunities to find a job you can enjoy	45.2	57.0	58.1	12.9	9.2*
2) a physically challenging environment	58.2	77.7	82.7	24.5	53.2*
3) an experience you can be proud of	47.1	69.0	68.3	21.2	27.7*
4) an advantage over going right from high school to college	40.7	49.3	45.3	4.6	2.9
5) an opportunity to develop leadership skills	58.4	67.7	72.6	14.2	15.0*
6) a chance to work with the latest high-tech equipment	64.2	74.4	78.6	14.4	17.3*

\*p&lt;.05.

(table continues)

Table 82

Percent Agree or Strongly Agree that the Army Offers Attributes Across Levels of Army Ad Recall (continued)

Percent "Agree or Strongly Agree" that Army Offers....	Among Primary Male Analytic Sample with:			(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall		
7) a great value in your civilian career development	38.0	52.6	53.3	15.3	12.6*
8) an opportunity to develop self-confidence	54.2	70.8	72.1	17.9	21.0*
9) an opportunity to develop your potential	55.5	67.9	68.7	13.2	10.8*
10) a mentally challenging experience	46.1	66.3	66.4	20.3	24.5*
11) an opportunity to become more mature and responsible	60.3	72.2	76.4	16.1	19.8*
12) many opportunities for training in useful areas	57.1	69.5	73.7	16.6	19.6*
13) many chances to work with highly trained people	53.7	69.9	74.2	20.5	29.2*
14) an excellent opportunity to obtain money for college or vocational school	56.1	72.2	77.5	21.4	35.6*
AVERAGE	52.3	66.3	68.6	16.3	
Number responding	211	420	3232		

\*p&lt;.05.

from the Army's communications objectives. The results are reported in terms of three groups: (a) those with no recall of active Army advertising, (b) those with aided recall, and (c) those with unaided recall of active Army advertising. The fourth column contains the differences in proportion agreeing between those who have unaided recall and those having no recall at all of Army advertising.

Recall is sometimes strongly associated with perceptions, other times weakly associated. The strongest significant associations between recall of active Army advertising and perceptions of the Army are found with agreement that the Army offers "a physically challenging environment," ( $\chi^2(2)=53.2$ ,  $p<.05$ ), "an excellent opportunity to obtain money for college or vocational school," ( $\chi^2(2)=35.6$ ,  $p<.05$ ), "an experience you can be proud of," ( $\chi^2(2)=27.7$ ,  $p<.05$ ), "many chances to work with highly trained people," ( $\chi^2(2)=29.2$ ,  $p<.05$ ), "a mentally challenging experience," ( $\chi^2(2)=24.5$ ,  $p<.05$ ), and "an opportunity to develop self-confidence," ( $\chi^2(2)=21.0$ ,  $p<.05$ ). All of these associations are statistically significant ( $p<.05$ ). These attributes are also seen as having high levels of emphasis in Army print and video advertising according to the message content analyses conducted for ACOMS. These message content analyses involved mail intercepts of more than 2,600 youth aged 16 to 24. Respondents were asked to view video and print Army advertisements and rate the extent to which they thought the advertisement sent each of the same 14 attributes. The message analysis is presented in Gaertner & Baxter (1987) in greater detail.

Further, the attributes for which the correlation between recall and perception are low tend to be less strongly conveyed in Army advertising. For example, the beliefs that the Army offers "an advantage over going right from high school to college" and "a wide variety of jobs you can enjoy" are messages not generally conveyed in Army print and video advertisements based on the message analyses. The former perception, an advantage over going right from high school to college, is not significantly associated with recall of Army advertising ( $\chi^2(2)=2.9$ ,  $p<.05$ ). The latter perception, that the Army offers a wide variety of opportunities to find a job to enjoy, is significantly but only weakly associated with recall ( $\chi^2(2)=9.2$ ,  $p<.05$ ).

Thus, the results suggest that those attributes most heavily advertised by the Army are more frequently seen as being offered by the Army among those recalling the advertising than among those who do not. The reverse is also true. Attributes not generally featured in Army advertising are not closely associated with recall.

One summary test of the observation that perceptions most affected are those most advertised is the correlation between (a) the emphasis placed on an attribute in the Army's advertising and (b) the effect of recall on perceptions of that attribute. The correlation between the proportion of message analysis respondents rating an attribute as conveyed to a "great" or "very great" extent in Army advertising averaged across all Army ads tested in the message content analysis and the effects of recall measured by the differences in

column 4 of Table 82 is .51 over the 14 attributes. While generalization based on 14 cases (that is, the attributes) is precarious, the results support the general observation that attributes most associated with recall are those most prominent in the Army's advertising. In this sense, then, Army advertising is effective in communicating the Army's communication objectives.

Tables 83 through 87 display the associations between recall of advertising for a component or service and perceptions of that component or service. Recall of Army Reserve advertising (Table 83) is strongly and significantly associated with beliefs that the Reserve offers "an excellent opportunity to develop self confidence," ( $\chi^2(2)=40.0$ ,  $p<.05$ ), to "serve America while living in your own hometown," ( $\chi^2(2)=21.0$ ,  $p<.05$ ), to obtain money for college or vocational school ( $\chi^2(2)=17.8$ ,  $p<.05$ ), to have interesting and exciting weekends ( $\chi^2(2)=11.9$ ,  $p<.05$ ), to become more mature and responsible ( $\chi^2(2)=8.1$ ,  $p<.05$ ), and to develop potential ( $\chi^2(2)=23.3$ ,  $p<.05$ ). While we have not conducted content analyses of Reserve advertising, these are clearly important communications objectives and are associated related to recall of Army advertising.

Recall of ROTC advertising (Table 84) is significantly associated with all of the perceptions concerning ROTC measured in the ACOMS interviews. The strongest associations are between recall and beliefs that the ROTC offers an opportunity to use college acquired skills ( $\chi^2(2)=136.5$ ,  $p<.05$ ), an experience to be proud of ( $\chi^2(2)=43.6$ ,  $p<.05$ ), a wide variety of opportunities to find a job to enjoy ( $\chi^2(2)=51.0$ ,  $p<.05$ ) and an opportunity to develop self-confidence ( $\chi^2(2)=44.6$ ,  $p<.05$ ). There is little tendency for factual information (e.g., that the ROTC offers an officer's commission) to be more closely associated with recall than attitudes (e.g., experience to be proud of).

It should be noted that the attributes are the Army's communications objectives rather than the objectives of the other services. An informal review of advertising for other services, however, does not suggest great differences between the communications objectives of the Army and other services.

Air Force and Army advertising recall levels seem about equally associated with favorable perceptions of the respective services (Table 86). To the extent that this association is a measure of advertising effectiveness, these two services' advertising seem equally effective. The associations between Navy ad recall and Navy perceptions are on the average a bit smaller (Table 85), and Marines (Table 87) a bit larger. While we have not examined the contents of other services' advertising in any systematic way, the patterns of correlation further appear to mirror their respective communications objectives. Thus, for example, the strong recall-perceptions associations for the Marine Corps center around pride ( $\chi^2(2)=8.7$ ,  $p<.05$ ), physical challenge ( $\chi^2(2)=7.2$ ,  $p<.05$ ), and leadership ( $\chi^2(2)=6.3$ ,  $p<.05$ ).

Table 83

Percent Agree or Strongly Agree that the U.S. Army Reserve Offers Attributes Across Levels of U.S. Army Reserve Ad Recall

Attribute	Among Primary Male Analytic Sample with:				
	Percent "Agree or Strongly Agree" that USAR offers...			(3) - (1)	
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	$\chi^2(2)$
1) a wide variety of opportunities to find a job you can enjoy	31.7	51.7	28.4	-3.3	17.7*
2) an experience you can be proud of	38.9	64.1	46.3	7.4	22.3*
3) an opportunity to develop leadership skills	45.2	66.2	54.5	9.3	15.2*
4) a great value in your civilian career development	37.4	52.5	38.0	0.6	8.9*
5) an opportunity to develop self-confidence	33.6	67.0	69.6	36.0	40.0*
6) an opportunity to develop your potential	38.6	64.8	50.1	11.5	23.3*

\* $p < .05$ .

(table continues)

Table 83

Percent Agree or Strongly Agree that the U.S. Army Reserve Offers Attributes Across Levels of U.S. Army Reserve Ad Recall (continued)

Percent "Agree or Strongly Agree" that USAR offers...	Among Primary Male Analytic Sample with:					$\chi^2(2)$
				(3) - (1)		
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall			
7) a mentally challenging experience	36.9	60.5	44.8	7.9	19.2*	
8) an opportunity to become more mature and responsible	53.0	67.6	69.2	17.2	8.1*	
9) many opportunities for training in useful skill areas	45.9	67.5	55.3	9.4	16.4*	
10) many chances to work with highly trained people	50.8	68.7	43.9	-6.9	16.7*	
11) an excellent opportunity to obtain money for college or vocational school	45.0	67.7	64.4	19.4	17.8*	
12) an opportunity to serve America while living in your own hometown	45.0	66.9	73.4	28.4	21.0*	
13) interesting and exciting weekends	25.7	43.6	45.1	19.4	11.9*	
AVERAGE	40.6	62.2	52.5	11.9		
Number Responding	195	407	63			

\* $p < .05$ .

Table 84

Percent Agree or Strongly Agree that the Reserve Officers' Training Corps (ROTC) Offers Attributes Across Levels of ROTC Ad Recall

Attribute	Among Primary Male Analytic Sample with:				
	Percent "Agree or Strongly Agree" that ROTC offers...				
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	$\chi^2(2)$
1) a wide variety of opportunities to find a job you can enjoy	23.0	40.1	49.1	26.1	51.0*
2) an experience you can be proud of	28.5	44.9	52.9	24.4	43.6*
3) leadership and management training	20.8	36.9	37.9	17.1	43.8*
4) an opportunity to develop self-confidence	25.0	40.9	51.0	26.0	44.6*

(table continues)

Note. Percentages are weighted data based on number of respondents given in table.

\* $p < .05$ .



Table 84

Percent Agree or Strongly Agree that the Reserve Officers' Training Corps (ROTC) Offers Attributes Across Levels of ROTC Ad Recall (continued)

Percent "Agree or Strongly Agree" that ROTC offers...	Among Primary Male Analytic Sample with:				
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	$\chi^2(2)$
5) a college elective that can be taken together with other college courses	26.0	40.4	44.5	18.5	33.7*
6) an officer's commission in the active Army, Army Reserve or the Army National Guard	27.2	40.2	48.0	20.8	29.0*
7) an opportunity to use your college acquired skills	26.7	41.6	49.6	22.9	136.5*
8) the opportunity to make changes and use your own judgment.	25.3	41.2	50.6	25.3	43.9*
AVERAGE	25.3	40.8	48.0	22.7	
Number Responding	1170	939	62		

\* $p < .05$ .

Table 85

Percent Agree or Strongly Agree that the Navy Offers Attributes Across Levels of Navy Ad Recall

Percent "Agree or Strongly Agree" that Navy offers...	Among Primary Male Analytic Sample with:				(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall			
<u>Attribute</u>						
1) a wide variety of opportunities to find a job you can enjoy	57.4	48.2	62.6	5.2	2.9	
2) a physically challenging environment	57.6	64.9	70.7	12.1	2.5	
3) an experience you can be proud of	67.6	56.8	69.5	1.9	2.6	
4) an advantage over going right from high school to college	44.4	41.0	46.2	1.8	.4	
5) an opportunity to develop leadership skills	69.6	62.4	75.6	6.0	3.0	
6) a chance to work with the latest hi-tech equipment	74.0	78.8	80.4	6.4	.8	

(table continues)

\*p&lt;.05.

Table 85

Percent Agree or Strongly Agree that the Navy Offers Attributes Across Levels of Navy Ad Recall (continued)

Percent "Agree or Strongly Agree" that Navy offers....	Among Primary Male Analytic Sample with:					(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall				
7) a great value in your civilian career development	59.5	49.4	54.4	-5.1		.9	
8) an opportunity to develop self- confidence	63.5	70.4	74.2	11.7		0.4*	
9) an opportunity to develop your potential	63.5	65.0	68.1	4.6		.4	
10) a mentally challenging experience	63.3	64.5	70.0	6.7		1.1	
11) an opportunity to become more mature and responsible	72.9	75.5	78.1	5.2		.8	
12) many opportunities for training in useful skill areas	70.1	60.7	74.9	4.8		3.4	
13) many chances to work with highly trained people	64.3	69.4	77.6	13.3		3.2	
14) an excellent opportunity to obtain money for college or vocational school	70.7	63.0	71.3	0.6		1.2	
AVERAGE	63.5	62.1	69.5	6.0			
Minimum Number Responding	72	78	219				

\*p &lt; .05.

Table 86

Percent Agree or Strongly Agree that the U.S. Air Force (USAF) Offers Attributes Across Levels of  
USAF Ad Recall

Percent "Agree or Strongly Agree" that USAF offers...	Among Primary Male Analytic Sample with:				(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall			
<u>Attribute</u>						
1) a wide variety of opportunities to find a job you can enjoy	43.0	57.2	60.8	17.8	2.2	
2) a physically challenging environment	53.0	67.4	68.2	15.2	1.7	
3) an experience you can be proud of	52.0	75.7	78.0	16.0	6.0*	
4) an advantage over going right from high school to college	40.1	53.1	41.4	1.3	2.2	
5) an opportunity to develop leadership skills	59.9	70.1	76.0	16.1	2.5	
6) a chance to work with the latest hi-tech equipment	80.1	88.3	82.9	2.8	1.0	

(table continues)

Note. Percentages are weighted data based on number of respondents given in table.

\* $p < .05$ .

Table 86

Percent Agree or Strongly Agree that the U.S. Air Force (USAF) Offers Attributes Across Levels of USAF Ad Recall (continued)

Percent "Agree or Strongly Agree" that USAF offers...	Among Primary Male Analytic Sample with:				(3) - (1)	$\chi^2(2)$
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall			
7) a great value in your civilian career development	42.9	62.8	60.3	17.4	2.4	
8) an opportunity to develop self-confidence	51.6	75.6	78.3	26.7*	6.3*	
9) an opportunity to develop your potential	54.4	68.6	73.9	19.5	3.2	
10) a mentally challenging experience	55.5	78.7	74.6	19.1	3.8	
11) an opportunity to become more mature and responsible	58.4	82.2	77.7	19.3	4.4	
12) many opportunities for training in useful skill areas	60.7	74.9	74.0	13.3	1.6	
13) many chances to work with highly trained people	66.9	85.5	81.4	14.5	3.1	
14) an excellent opportunity to obtain money for college or vocational school	50.8	62.6	66.3	15.5	1.8	
AVERAGE	55.0	71.6	71.0	16.0		
Number Responding	34	96	257			

\* $p < .05$ .

Table 87

Percentage Agree or Strongly Agree that the Marine Corps (USMC) Offers Attributes Across Levels of USMC Ad Recall

Attribute	Among Primary Male Analytic Sample with:				
	Percentage "Agree or Strongly Agree" that USMC offers...			(3) - (1)	
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	$\chi^2(2)$	
1) a wide variety of opportunities to find a job you can enjoy	27.3	49.4	47.6	20.3	4.9
2) a physically challenging environment	58.9	73.9	80.7	21.8	7.2*
3) an experience you can be proud of	42.0	67.4	69.9	27.9	8.7*
4) an advantage over going right from high school to college	19.2	44.2	43.7	24.5	5.1*
5) an opportunity to develop leadership skills	51.8	68.3	74.1	22.3	6.3*
6) a chance to work with the latest hi-tech equipment	51.0	73.6	71.1	17.1	4.8

(table continues)

Note. Percentages are weighted data based on number of respondents given in table.

\*p<.05.

Table 87

Percentage Agree or Strongly Agree that the Marine Corps (USMC) Offers Attributes Across Levels of USMC Ad Recall (continued)

Percentage "Agree or Strongly Agree" that USMC offers...	Among Primary Male Analytic Sample with:					$\chi^2(2)$
				(3) - (1)		
	(1) No Recall	(2) Aided Recall	(3) Unaided Recall			
7) a great value in your civilian career development	39.7	49.5	51.4	11.7	1.5	
8) an opportunity to develop self-confidence	58.0	77.7	73.3	15.3	4.0	
9) an opportunity to develop your potential	52.3	62.6	70.7	18.4	4.4	
10) a mentally challenging experience	50.8	65.1	72.0	21.2	5.7	
11) an opportunity to become more mature and responsible	56.4	68.2	76.6	20.2	11.9*	
12) many opportunities for training in useful skill areas	48.1	62.4	61.1	13.0	2.3	
13) many chances to work with highly trained people	43.8	74.7	59.2	14.4	7.5*	
14) an excellent opportunity to obtain money for college or vocational school	53.0	59.9	59.0	6.0	0.6	
AVERAGE	46.6	64.1	65.0	18.4		
Minimum Number Responding	61	80	247			

\* $p < .05$ .

### Summary and Discussion

This working paper has been directed to an analysis of recall of Army and other military advertising, and recall of sources of military advertising. We can summarize the results in terms of the effectiveness of Army and other military advertising, assessed several different ways. The data suggest the following interpretations:

- (1) The Army's advertising has been effective in producing high levels of "top-of-mind" awareness compared with other services measured in terms of aided and unaided recall. However, recall of ROTC, Army Reserve and Army National Guard advertising is less. Levels of advertising recall are surprisingly consistent across educational, regional, age and ethnic groups. Some differences exist suggesting lower recall among the work oriented, youth in the 6th Recruiting Brigade (Far West) and older youth.
- (2) There are strong differences in source recall. Television and magazine advertising are recalled more frequently and tend to be associated with unaided rather than aided recall. Focused print advertising (e.g., direct mail, posters, pamphlets) seems better able than broadcast advertising to effectively target age and educational groups of interest.
- (3) Brand image effects for ad recall are noted for military advertising, in that youth recalling advertising for one service are likely to recall other service-specific advertising. Further, an Army brand image is supported since youth recalling an advertisement for one Army component are likely to recall advertising for other components.
- (4) Recall of active Army advertising is associated with favorable perceptions of the active Army, most strongly for messages which are heavily emphasized in active Army advertising, less strongly for messages less heavily emphasized (emphasis measured in terms of the message content analyses). More generally, service-specific and component-specific advertising recall is associated with positive perceptions of the service or component advertised, and especially for messages apparently receiving high emphasis.

The analysis suggests several directions for additional research. First, the weak recall and top-of-mind awareness of Army radio advertising seem puzzling. Analyses contained in Chapter 8 of this report (Greenlees & Gaertner, 1988) show that some radio programs do seem to lead to high levels of unaided recall of Army advertising. Since these programs do not receive wide distribution, a narrow-cast strategy may be appropriate for radio exposure. This hypothesis can be explored further.



Second, the capacity of focused print advertising to target desired market segments can be analyzed in terms of additional market segments. It may be, for example, that key ROTC and Reserve component market segments (perhaps defined differently than those used here) can be effectively targeted using focused print advertising. Additional research can also be directed to the comparatively low levels of active Army ad and source recall observed in the Far West.

Third and finally, the general finding that "top-of-mind" awareness of advertising results in favorable perceptions for attributes most heavily emphasized is backed by systematic evidence only for Army advertising. Some content analysis of other service advertising might provide a more systematic basis for this finding. Further, we do not yet know whether other factors of youth background or media habits may condition this relationship.

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## 9. KNOWLEDGE OF ARMY OFFERS

Linda J. Keil and Gregory H. Gaertner

### Overview

#### Requirement

To assess the levels of knowledge of Army benefits and offers among youth, overall and by market segment. To establish the links between knowledge of the Army's offers and the recall of Army advertising, perceptions of the Army and its personnel, enlistment intentions, and enlistment-related actions.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS) between October 1986 and June 1987, survey respondents were asked a series of questions about their knowledge of benefits and offers of the active Army, the Army Reserve (USAR), and Army National Guard (ARNG). Youth were asked about educational benefits, eligibility requirements, and special programs such as the Delayed Entry Program and Scholar-Athlete Award. They were also asked to estimate the percentages of new Army recruits, in particular, educational and ability categories. The analyses reported in this chapter are based on the responses to these questions by 2,082 16- to 24-year-old males in the Army's primary enlisted recruiting market.

The analysis begins by reporting the proportions of respondents answering each of the knowledge questions correctly. Interitem associations are then examined by cross-tabulation. Indicators of youths' knowledge of the active Army and the USAR/ARNG are created and used along with the individual variables in examining links between knowledge of offers and recall of Army advertising, perceptions of the Army and its personnel, enlistment intentions, and enlistment-related behaviors. Cross-tabulations for each of these links are presented and discussed.

#### Results

Levels of knowledge of Army benefits and offers. The results suggest that knowledge that the active Army and the Army Reserve and National Guard offer educational benefits and delayed enlistment is widespread in the youth market, but specific knowledge of the amount of educational benefits or length of service is less widespread.

While there are few differences in overall knowledge of the Army's offers by market segment, groups positioned to make use of an offer generally seem more knowledgeable about it. College students and college-oriented high school students are more likely than work-oriented high school students or nonenrolled high school graduates to know the maximum educational benefits offered by the Army even though they are not more likely to be generally knowledgeable about the

Army's offers. Knowledge of active Army and Army Reserve and National Guard benefits and offers does not seem to vary systematically over the year.

Relationships among knowledge measures. The development of summary indicators of knowledge about Army and component-specific offers took the path of index rather than scale construction, in part because of the comparatively low levels of intercorrelation among different knowledge items. These low intercorrelations suggest that knowledge of specific benefits and offers seems more likely to exist as isolated facts than as a highly coherent body of knowledge. There was, however, some tendency for knowledge of educational benefits to cluster together. The subsequent analyses relied both on specific items and on summary indices of knowledge of active Army and USAR and ARNG offers.

Knowledge of Army offers and recall of Army advertising. Those with recall of active Army advertising are more likely to be knowledgeable about Army offers than those who do not recall the advertising. Further, the particular items most affected by recall figure prominently in the copy points for many Army ads, and points less prominent in Army advertising are less related to recall. Knowledge of USAR and ARNG offers is not closely associated with recall of Army Reserve or National Guard advertising.

Knowledge of Army offers and perceptions of the Army. Perceptions of the active Army are positively associated with knowledge of the Army's offers. In particular, youth knowledgeable about Army education benefits are more likely to have favorable perceptions of the Army than respondents unaware of these benefits. While knowledge of USAR offers is associated with favorable perceptions of the Army Reserve, the associations are less strong, and less closely linked to educational benefits. Further, knowledge-related items focusing on the image of new recruits in the Army are closely linked with perceptions of the active Army. Perceptions of the USAR and ARNG are less closely associated with images of new recruits, either because there was little connection seen between new recruits and the USAR/ARNG or because perceptions of these components are seen as less dependent on the quality of recruits.

Knowledge of Army offers and enlistment-related behavior and intention. Knowledge of active Army offers also seems linked to enlistment-related actions and intentions. Youth undertaking enlistment-related activities are more knowledgeable about active Army offers than those not active in enlistment-related behavior. However, to establish a causal connection between knowledge of offers and enlistment behaviors we need to control for overall youth career-planning activity and defeat the alternative hypothesis that youth gain knowledge as they undertake enlistment behaviors. The latter point may require longitudinal data.

## Utilization

This chapter provides useful information to Army policymakers about existing levels of knowledge of Army benefits and offers among youth in the primary enlisted market. Information provided will also inform plans for the content of advertising.

Basic analyses reported in this chapter will also help other Army analysts in further analyses of knowledge of Army offers using the ACOMS data files.

## Introduction

This chapter presents the findings of analyses of the knowledge of Army offers held by male youth interviewed between 13 October 1986 and 30 June 1987 for the Army Communications Objectives Measurement System (ACOMS).

The first questions of interest about knowledge of Army benefits and offers are how widespread it is among youth, and what particular information is known by youth in various educational, regional, age, racial, and ethnic market segments. Given this descriptive picture of Army benefits and offers knowledge, we then ask where the knowledge comes from and how it affects the attitudes and behavior of youth in the enlisted market. To address the former question, we explore the relationship between knowledge of Army benefits and offers and recall of Army advertising. To address questions concerning the effects of knowledge, we analyze the relationships between knowledge of Army benefits and offers and youths' perceptions of the Army, their enlistment intentions, and their enlistment-related actions.

The analysis begins with a description of the level of knowledge among youth about specific Army benefits and offers, overall and by market segments. Associations between knowledge of various Army benefits and offers are then examined to determine if knowledge tends to be specific to Army components or if particular kinds of knowledge, such as information on educational benefits, tend to cluster together across components. Next, summary scales are constructed to represent the breadth of knowledge among youth about Army and component-specific offers. These scales are then used together with individual knowledge items in examining the associations among knowledge and other aspects of the hierarchy of effects model of advertising effectiveness. Relationships between recall of Army advertising and knowledge of Army benefits and offers are then assessed separately for each Army component and, also, by source of advertising to address the question of origin of knowledge. The relationships between knowledge and the favorability of youth perceptions of the active Army, the USAR, and the ARNG and knowledge as related to their enlistment intentions with regard to each component are assessed. Finally, we explore the relationship between knowledge of Army benefits and offers and youths' enlistment-related actions. Results are then summarized and future analytic directions discussed.

## Methods

### Sample

The findings reported in this paper are based on interviews with the Primary Male Analytic Sample (PMAS) conducted between 13 October 1986 and 30 June 1987. The PMAS is a subsample of those youth interviewed for ACOMS that consists of males in the 48 contiguous United States between the ages of 16 and 24 who have not served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college Reserve Officers' Training Corps (ROTC) course; and who have not yet completed their sophomore year in college. The total number of PMAS youth interviewed during the first three quarters of data collection was 4,096. Since the knowledge module of the ACOMS questionnaire is a rotating module, 2,082 (approximately one-half) of these youth were randomly selected to receive questions about their knowledge of Army benefits and offers. Knowledge-Image questions were asked of the full youth sample. Unweighted numbers of cases are reported in tables of results. All results, however, are reported on the dataset weighted to represent a cross-section of American 16- to 24-year-olds.

### Questionnaire Measures

Questions about Army benefits and offers used in this analysis are separated into two groups: (a) questions pertaining to the active Army, and (b) questions pertaining to the USAR and ARNG. They are presented with correct answers appearing in parentheses.

Knowledge of active Army benefits and offers. These questions refer to the Army in general but are assumed to indicate knowledge of the active Army.

- (1) Is it possible to earn money for college by enlisting in the Army? (Answer: Yes)
- (2) (If answers "Yes" to first question) How much do you think can be earned through Army education benefits? (Answer: \$15,000+)
- (3) (If answers "Yes" to first question) Do you think Army education benefits are more, less or about the same as the Navy, Air Force or Marines offer? (Answer: More)
- (4) Please tell me whether or not the Army offers the "GI Bill"? (Answer: Yes)
- (5) What is the minimum number of years that a new recruit has to serve on active duty in the Army? (Answer: 2 years)
- (6) Is it possible to sign up for the Army and start serving up to one year later? (Answer: Yes)

Knowledge of Army reserve and Army national guard benefits and offers. These questions refer specifically to knowledge of the Army Reserve and National Guard.

- (1) Are 17-year-old high school juniors eligible to join the Army Reserve or Army National Guard? (Answer: Yes)
- (2) (If answers "No" to prior question) Is high school graduation required before joining the Army Reserve or Army National Guard? (Answer: No)
- (3) Who sponsors the "Scholar-Athlete Award Program?" Is it the Marine Corps, National Guard, Army Reserve, Air Force or Navy? (Answer: Army Reserve)
- (4) Can qualified people who join the Army Reserve or Army National Guard receive money for college? (Answer: Yes)
- (5) (If answers "Yes" to prior question) What is the maximum amount of money for college that qualified people who join the Army Reserve or Army National Guard can receive under the "GI Bill"? (\$4,000 - \$5,999)

Knowledge-image questions. Three additional questions function as indicators of the Army's image. It is unlikely that youth actually know the correct answers to these questions as the specific information is not included in Army advertising. Rather, we assume they guess the answers on the basis of their impressions of the Army.

- (1) Of the people who joined the Army in the last year, what proportion do you think are high school diploma graduates? Would you say...

less than one quarter,  
about one quarter,  
about one half,  
about three quarters, or  
almost all?

(Answer: Almost all)

The data that serve as the basis for this "correct" answer were provided by ACOMS Contracting Officer's Representative (COR). They are:

Proportion Army Nonprior Service (NPS) Accessions with High School Diplomas

FY	Active	USAR	ARNG*	Total
86	.92	.91	.83	.90
87	.91	.93	.83	.90

\*Estimated

- (2) Of the people who joined the Army last year, what proportion do you think would score in the upper half of an intelligence test? Is it...

all of them,  
three quarters of them,  
half of them,  
one quarter of them, or  
none of them?

(Answer: Half of them or three quarters of them)

Based on the following:

Proportion Army NPS Accessions in AFQT Categories I - IIIA

FY	Active	USAR	ARNG*	Total
86	.65	.61	.50	.60
84*	.66	.68	.50	.63

\*Estimated

- (3) Of the people who joined the Army in the last year, what proportion do you think will get a college diploma either while they are in the Army or after they complete their Army service? Would you say...

less than one quarter,  
about one quarter,  
about one half,  
about three quarters, or  
almost all?

(Answer: About one quarter or about one half)

The "correct" answer to this question is necessarily an estimate because of the future time referent. The estimate of one-fourth to one-half is based on known and estimated college completion rates among separatees who enlisted in the Army between 1977 and 1982 plus the current proportion of high Armed Forces Qualifications Test (AFQT) scorers among recent recruits and the current requirement of a two-year college diploma for promotion to noncommissioned officer NCO.

Analyses

Description of the knowledge held by PMAS youth is first reported as the percentages of PMAS youth who correctly answered each of the questions concerning benefits and offers of the active Army, the U.S. Army Reserve (USAR) and the Army National Guard (ARNG) listed above. Knowledge about the benefits and offers of the Army ROTC is not



addressed in this paper because youth who were asked questions about the ROTC constitute a different subsample, the officer market.

In addition to reporting the percentages of youth who correctly answer each of the knowledge questions, we computed summary indicators of benefits and offers knowledge by counting the number of correct responses to questions about (a) the active Army (six questions) and (b) the USAR and ARNG (five questions). To allow comparisons of these two indicators, we then multiplied the active Army score by .833 to convert it to a five-point indicator like the USAR/ARNG indicator. The means of these two knowledge indicators are reported by educational, regional, age, racial, and ethnic market segments.

Associations among knowledge items were explored using cross-tabulations. The Yule's Q statistic was computed as a measure of the strength of observed associations among items. Yule's Q is a measure of association appropriate for dichotomous data. It is calculated as follows. If the variables are scored as "yes" and "no," we can compute the odds of being a "yes" on one variable in each category of the second variable. The ratio of these odds (the odds ratio) is a measure of the association between the two variables, but has no bounds. The odds ratio minus one divided by the odds ratio plus one is Yule's Q. Q is most frequently used as a measure of scalability and has a range of -1 to +1 (Yule & Kendall, 1950; Davis, 1971). The relationships between knowledge and recall, knowledge and intentions, and knowledge and behaviors were explored by cross-tabulating specific knowledge items as well as summary knowledge indicators with relevant items and/or scales from the recall, intentions and behaviors modules. Knowledge-Image responses were cross-tabulated with youths' perceptions of the Army to demonstrate the relationships among knowledge and favorability of perceived Army opportunities.

## Results

### Knowledge of Benefits and Offers

The percentages of PMAS youth who answered each of the knowledge questions correctly are found in Table 88. Among the questions relevant to the active Army, the largest percentages of correct answers are in response to questions about the Army's provision of educational benefits (94.7%), the Army's GI Bill offer (85.6%), and the Delayed Entry Program (DEP) (85.0%). Youth are least likely to know that the Army offers more educational benefits than the other services (14.6%), the total amount of education benefits available (25.8%), and the minimum length of a tour of duty (39.8%). These findings suggest that youth are quite likely to know about Army benefits and offers on a general level but are less likely to know the specifics of such offers. One exception appears to be their knowledge of the DEP, which is both widespread and specific in content. These findings have been stable across the three quarters of ACOMS data collection as reported in the Quarterly Reports (Gaertner, Nieva, Elig, & Benedict, 1988).

Table 88

Percentages of Primary Male Analytic Sample Youth Answering Knowledge Questions Correctly

	Percentage Correct	Population Estimate	Unweighted Count
<u>Active Army Knowledge</u>			
Army Offers College Money?	94.7	3,253,753	1,981
Amt. Army Ed. Benefits	25.8	885,640	554
GI Bill - Army	85.6	2,937,401	1,782
Army Benefits More?	14.6	503,006	331
Minimum Years	39.8	1,367,398	834
Delayed Entry Program	85.0	2,917,467	1,761
<u>USAR/ARNG Knowledge</u>			
USAR/ARNG Offers College Money?	85.6	2,938,943	1,790
Amt. USAR/ARNG Ed. Benefits	9.7	331,496	197
H.S. Junior Eligible?	63.1	2,167,455	1,325
H.S. Grad. Required?	80.2	2,753,778	1,658
Scholar - Athlete Award	30.9	1,059,665	653

Note. Percentages are weighted data based on the number of respondents reported in the unweighted count column.

Knowledge about Army Reserve and Army National Guard benefits follows a similar pattern. That is, youth are more likely to know that it is possible to earn money for education by enlisting in the USAR or ARNG (85.6%) and less likely to know the specific amount available (9.7%). Knowledge of Army Reserve and National Guard enlistment eligibility requirements is fairly widespread. For example, 80.2% of youth correctly answered that high school graduation is not necessary prior to enlistment and 63.1% knew that 17-year-old high school juniors are eligible to enlist. It should be noted that there is a logical dependency between these two questions. The 63.1% correctly answering the question about high school juniors are assumed to know that high school graduation is not required prior to enlistment. Therefore, they are included in the proportion who answer the high school graduation question correctly even though they are not asked this question. Again, this pattern of findings has been stable across quarters, as discussed in the Quarterly Reports.

There are relatively few differences among market segments in knowledge of the Army's benefits and offers. There are no significant differences among brigades or ethnic groups. With few exceptions, differences that do occur among market segments are confined to the specific knowledge questions as shown in Table 89. Significant differences among educational groups in knowledge of the amount of

Table 89

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions by Market Segments

<u>Knowledge Items</u>						
	Army Offers College Money	Amount Army Ed. Benefits	Army Benefits More?	GI Bill Army	Minimum Years	Delayed Entry Program
<u>Education</u>						
College Freshmen and Sophomores	95.0	32.3	16.8	87.2	42.6	87.1
College-Oriented H.S. Students	95.7	27.7	17.2	88.1	38.0	81.0
Work-Oriented H.S. Students	92.0	22.5	13.4	89.3	28.2	78.7
H.S. Graduates Not Currently Enrolled	94.4	22.0	11.9	82.4	42.1	88.3
$\chi^2(3)$	2.5	11.2*	6.3	8.3*	8.6*	14.1*
<u>Brigade</u>						
1st Recruiting Brigade	94.2	27.5	13.5	82.8	40.6	83.2
2nd Recruiting Brigade	94.6	25.5	16.2	88.0	32.8	85.1
4th Recruiting Brigade	96.4	25.7	13.8	85.9	40.7	87.2
5th Recruiting Brigade	93.9	26.4	12.7	85.2	42.2	85.4
6th Recruiting Brigade	94.1	23.7	17.8	86.8	42.8	83.6
$\chi^2(4)$	2.6	1.0	3.4	3.2	6.5	2.4
(table continues)						

(table continues)

Note. Percentages are weighted data based on 2,082 respondents.

\*p < .05.

Table 89

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions by Market Segments

<u>Knowledge Items</u>							
Market Segment	Army Offers	Amount	Army Benefits	GI Bill	Minimum Years	Delayed Entry	
	College Money	Army Ed. Benefits	More?	Army		Program	
<u>Age</u>	16- to 17-year-olds	95.2	26.6	16.4	87.4	35.1	79.8
	18- to 19-year-olds	96.2	29.7	17.2	89.1	43.2	87.2
	20- to 21-year-olds	95.2	25.1	15.3	85.4	35.9	84.1
	22- to 24-year-olds	92.2	21.3	9.0	79.6	46.2	88.7
	$\chi^2(3)$	5.8	6.0	10.7*	13.2*	12.5*	17.1*
<u>Race</u>	White	95.5	25.9	14.3	85.3	41.6	86.7
	Black	91.1	26.0	15.4	89.7	29.9	78.4
	Asian/Pacific Islander	92.6	13.9	21.8	78.1	36.8	73.8
	American Indian/ Alaskan Native	91.6	48.8	11.7	35.1	51.2	84.4
	$\chi^2(3)$	6.6	6.9	1.8	4.8	10.1*	12.3*
<u>Hispanic</u>							
	Yes	97.4	21.8	15.9	85.1	41.6	80.0
	No	94.4	26.2	14.6	85.6	39.6	85.5
$\chi^2(1)$	2.1	1.2	0.2	0.0	0.2	2.8	(table continued)

(Table continues)

Table 89  
Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge  
Questions by Market Segments

Market Segment	Percentage Correct				Amount
	H.S. Junior Eligible?	H.S. Grad. Required?	Scholar- Athlete Award	USAR/ ARNG Offer College Money?	USAR/ ARNG Ed. Benefits
<u>Education</u>					
College Freshmen and Sophomores	63.2	78.4	32.4	87.7	12.0
College-Oriented H.S. Students	61.0	77.0	34.0	89.01	9.0
Work-Oriented H.S. Students	59.7	80.1	35.5	86.1	6.2
H.S. Graduates Not Currently Enrolled	65.3	83.4	27.0	82.0	9.8
	2.4	6.6	6.9	10.4*	3.3
	$\chi^2(3)$				
<u>Brigade</u>					
1st Recruiting Brigade	61.6	79.4	31.8	86.6	12.3
2nd Recruiting Brigade	60.8	80.3	29.3	83.4	6.6
4th Recruiting Brigade	67.3	82.9	31.3	86.3	10.2
5th Recruiting Brigade	66.5	80.5	31.5	86.4	10.0
6th Recruiting Brigade	57.7	76.6	30.1	84.9	8.5
	7.2	3.4	0.5	1.5	5.2
	$\chi^2(4)$				
	(table continues)				

Table 89

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions by Market Segments

Market Segment	<u>Knowledge Items</u>						
	Army Offers College Money	Amount		Army Benefits More?	GI Bill Army	Minimum Years	Delayed Entry Program
		Army Ed.	Benefits				
<u>Age</u>	16- to 17-year-olds	58.5	76.3	33.5	88.4		8.5
	18- to 19-year-olds	70.2	82.1	34.3	88.7		12.0
	20- to 21-year-olds	60.7	82.0	25.7	85.8		10.6
	22- to 24-year-olds	64.2	82.3	27.6	78.3		8.1
	$\chi^2(3)$	11.8*	6.3	7.7	18.8*		3.7
<u>Race</u>	White	63.1	79.0	30.8	85.9		9.3
	Black	63.3	85.4	29.4	84.1		9.0
	Asian/Pacific Islander	66.2	87.0	30.7	90.2		24.4
	American Indian/Alaskan Native	69.9	83.8	63.1	78.8		7.9
	$\chi^2(3)$	0.4	5.3	7.4	1.6		9.6*
<u>Hispanic</u>	Yes	58.5	80.5	32.2	83.2		7.2
	No	63.8	80.2	30.7	85.8		10.0
	$\chi^2(1)$	1.4	0.0	0.1	0.7		1.0

money that can be earned by enlisting in the Army ( $\chi^2(3)=11.2$ ,  $p<.05$ ) appear mainly due to college freshmen and sophomores and college-oriented high school students being more likely to answer correctly than the remaining two groups, possibly because they are most likely to be interested in receiving educational benefits. Significant differences among educational groups also occur in knowledge of the minimum length of a tour of duty ( $\chi^2(3)=8.6$ ,  $p<.05$ ) and the DEP ( $\chi^2(3)=14.1$ ,  $p<.05$ ). Both of these specific knowledge items appear to be less well-known among work-oriented high school students than the other educational groups. Age differences occur in response to questions about whether the Army offers more in educational benefits than the other services ( $\chi^2(3)=10.7$ ,  $p<.05$ ), the length of a tour of duty ( $\chi^2(3)=12.5$ ,  $p<.05$ ), and the DEP ( $\chi^2(3)=17.1$ ,  $p<.05$ ). Differences among racial groups are confined to questions concerning length of a tour of duty ( $\chi^2(3)=10.1$ ,  $p<.05$ ), the DEP ( $\chi^2(3)=12.3$ ,  $p<.05$ ), and the maximum amount of USAR/ARNG educational benefits ( $\chi^2(3)=9.6$ ,  $p<.05$ ). Although the nature of the differences among groups varies across these items (i.e., there is no consistent pattern of which groups are high or low in knowledge), the items themselves all refer to specific rather than general knowledge of the Army's benefits and offers. This suggests that specific knowledge about particular benefits and offers may be best known among groups who are most likely to take advantage of them.

It does appear that older youth and those who have graduated from high school but are not currently enrolled in school are less likely to have some of the general knowledge about the Army's benefits and offers than other age and educational groups. For example, there are significant age and educational differences in identification of the Army with the GI Bill ( $\chi^2(3)=13.2$  and  $\chi^2(3)=8.3$  respectively,  $p<.05$ ) that appear to be attributable to lower percentages of correct answers among 22- to 24-year-olds and high school graduates not currently enrolled in school. These two groups also appear least likely to know that money for education can be earned by enlisting in the USAR and ARNG (age:  $\chi^2(3)=18.8$ ,  $p<.05$ ; education:  $\chi^2(3)=10.4$ ,  $p<.05$ ).

In summary, general knowledge about the Army's offers and benefits is widespread while more specific knowledge is less widespread. These findings have been stable across all quarters of ACOMS data collection. Relatively few differences among market segments are shown. Those differences that do occur tend to be on the more specific knowledge items, although older youth and those who have graduated from high school but are not currently enrolled in school are less likely than other age and educational groups to have some general knowledge about Army benefits and offers.

#### Relationships Among Knowledge Items

In exploring the relationships among knowledge items, we included all knowledge of active Army and knowledge of USAR/ARNG questions but excluded the Knowledge-Image items. The latter are reported separately later in the chapter.

Table 90 contains Yule's Q statistics for associations among knowledge items. Relatively strong associations are found among those items referring to general knowledge about the availability of educational benefits. The association between earning educational money by enlisting in the Army and by enlisting in the USAR/ARNG is .619, while both questions are also highly associated with knowledge that the Army offers the GI Bill ( $Q = .683$  and  $.563$  respectively). These results suggest that general knowledge of educational benefits tends to be associated regardless of Army component.

The pattern of associations among measures of knowledge of the active Army benefits and offers ranges from strong to weak. Relatively high levels of association are observed between knowledge of the DEP and the remaining active Army knowledge items (except association of knowledge of the DEP with knowledge that the Army offers more in education benefits than other services). However, knowledge of the minimum length of a tour of duty is very weakly associated with the remaining items. Associations among items measuring knowledge of the USAR and ARNG are all relatively weak. In summary, there appears to be a weak tendency for active Army knowledge items to cluster together but very little tendency for USAR/ARNG items to do so. This suggests that knowledge of benefits and offers of the Army's components is more likely to exist as isolated facts than as a highly coherent body of knowledge.

To test these observations, the knowledge items were intercorrelated and the standardized item alpha calculated for reliability of a scale including all knowledge measures, then for scales including active Army and USAR/ARNG measures separately. None of these scales met the conventional reliability criterion of .60 indicating that the interitem correlations are insufficient to warrant scaling of the measures.

An analysis of the pattern of interitem associations suggests that we are sampling from relatively independent areas of knowledge rather than from one or two cohesive bodies of knowledge about benefits and offers. Traditional scale construction relies on the pattern of interitem associations such that scales are formed from highly correlated items. A scale constructed in this way would indicate the depth of an individual's knowledge in a particular area. Conversely, the use of summary indicators is appropriate when a series of measures sample from relatively independent areas of knowledge. These indicators refer to the breadth of an individual's knowledge across areas. A high score on an indicator of active Army knowledge implies broad knowledge of benefits and offers, while a low score may indicate a restricted range of knowledge such as might occur if the individual was only generally aware of the Army's educational benefits and nothing more.

To summarize the knowledge of active Army offers an indicator was constructed by counting the number of correct responses to the six active Army knowledge questions listed in the Data section. Similarly, correct responses to the five USAR/ARNG questions were summed to form an indicator of the knowledge about USAR/ARNG offers.



Table 90

Yule's Statistics for Association Among Primary Male Analytic Sample Youth Responses to Knowledge of Army Offers Questions Categorized as Correct or Incorrect

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Army offers college money?	---					
(2) Amt. Army Ed. benefits	**a	---				
(3) Army benefits more?	**a	0.294*	0.567*			
(4) GI Bill-Army	0.683*	0.450*	0.119	0.173*		
(5) Min. Yrs.	0.269*	0.191*	0.044	0.462*	0.338*	---
(6) Delayed Entry Program	0.567*	0.446*	0.189*	0.314*	0.152*	0.315*
(7) H.S. Jun. eligible?	0.254*	0.187*	0.342*	0.364*	0.070	0.359*
(8) H.S. Grad. required?	0.376*	0.240*	0.270*	0.487*	0.140*	0.300*
(9) Scholar-Athlete Award	0.322*	0.074*				
(10) Reserve/Guard offer college money?	0.619*	0.322*	-0.047	0.563*	0.075	0.447*
(11) Amt. Reserve/Guard Ed. Benefits	0.468*	-0.229*	-0.053	0.460*	-0.074	0.434*

(table continues)

Note: Unweighted Count = 2,082

\*p&lt;.05

aIndicates Q's not reported because questions are logically dependent.

Table 90

Yule's Statistics for Association Among Primary Male Analytic Sample Youth Responses to Knowledge of Army Offers Questions Categorized as Correct or Incorrect (Continued)

	(7)	(8)	(9)	(10)	(11)
(1) Army offers college money?					
(2) Amt. Army Ed. benefits					
(3) Army benefits more?					
(4) GI Bill-Army					
(5) Min. Yrs.					
(6) Delayed Entry Program					
(7) H.S. Jun. eligible?	---	---			
(8) H.S. Grad. required?	**a				
(9) Scholar-Athlete Award	0.209*	0.069	---		
(10) Reserve/Guard offer college money?	0.267*	0.263*	0.298*	---	
(11) Amt. Reserve/Guard Ed. Benefits	0.155	0.062	0.287*	**a	---

\*p<.05.

The active Army indicator was then multiplied by .833 to convert it to a five-point index so that it can be directly compared with the indicator for the USAR/ARNG.

Table 91 contains the mean number of questions for each of the two indicators answered correctly by all PMAS youth and by market segments. The average active Army Knowledge for PMAS youth is 2.88. The average Army Reserve and Army National Guard Knowledge for PMAS youth is 2.69. Intergroup variability is relatively small in all cases implying similar levels of knowledge among youth in all market segments. However, there are significant differences among educational groups on the active Army indicator ( $F(4,65)=3.9, p<.05$ ); and among age groups on both the active Army and USAR/ARNG indicators ( $F(4,65)=4.9, p<.05$ , and  $F(4,65)=3.8, p<.05$ , respectively). College freshmen and sophomores appear to be the group with the highest average score on the active Army indicator among education groups, while 18- and 19-year-olds have the highest average score on both scales among age groups. There are no significant regional, racial, or ethnic differences on either indicator.

#### Knowledge of Army Offers and Recall of Army Advertising

These analyses focus on the relationship between the knowledge of Army benefits and offers and recall of Army advertising. It seemed possible that youth who recall advertising by an Army component would be more likely to have information about that component than youth who do not recall the advertising. To explore this, we considered three levels of advertising recall:

- (1) Unaided Recall: Respondent offered the name of the Army component when asked whether he recalled having seen military advertising.
- (2) Aided Recall: Youth responded positively when asked whether he had seen advertising for the Army component.
- (3) No Recall: Respondent did not offer the name of an Army component and could not recall ads for that component when asked directly.

Tables 92 through 94 contain the percentages of PMAS youth in each of the three recall categories who correctly answered the active Army and USAR/ARNG questions listed in the tables. The fourth column in each table indicates the differences in percentages of youth who answered questions correctly among those with unaided recall and no recall of Army component advertising. Table 92 refers to recall of Army advertising (assumed to be active Army) while Table 93 refers to recall of USAR ads, and Table 94 to ARNG ads.

The data in Table 95 show that greater percentages of youth who recall Army ads answer questions about the active Army's benefits and offers correctly. Significant differences among the three recall groups were found for knowledge that the Army offers the GI Bill ( $\chi^2(2)=22.5, p<.05$ ), the maximum amount of educational benefits

Table 91

Mean Number Correct for Knowledge of Army Indicator and Knowledge of U.S. Army Reserve/Army National Guard (USAR)/(ARNG) Indicator

Market Segments	Mean Number Correct		Population Estimate	Unweighted Count
	Knowledge of			
	Army	USAR/ ARNG		
<u>Education</u>				
College Freshmen & Sophomores	3.01	2.73	2,067,802	375
College-Oriented H.S. Students	2.90	2.70	3,150,097	792
Work-Oriented H.S. Students	2.70	2.67	843,835	207
H.S. Graduates Not				
Currently Enrolled	2.84	2.66	4,242,325	708
F(4,65)	3.93*	0.14		
<u>Brigade</u>				
1st Recruiting Brigade	2.84	2.72	2,238,632	468
2nd Recruiting Brigade	2.85	2.60	1,910,296	353
4th Recruiting Brigade	2.91	2.78	2,530,174	615
5th Recruiting Brigade	2.88	2.74	1,916,395	343
6th Recruiting Brigade	2.90	2.58	1,708,562	303
F(5,64)	0.50	2.31		
<u>Age</u>				
16- to 17-year olds	2.83	2.65	3,438,021	878
18- to 19-year olds	3.04	2.87	2,573,994	527
20- to 21-year olds	2.84	2.65	1,866,546	319
22- to 24-year olds	2.81	2.61	2,425,503	358
F(4,65)	4.92*	3.77*		
<u>Race</u>				
White	2.91	2.68	8,334,164	1,771
Black	2.75	2.72	1,476,460	212
Asian/Pacific Islander	2.64	3.00	295,351	52
Alaskan/American Indian	3.06	3.05	117,715	23
F(4,65)	2.00	0.72		
<u>Ethnicity</u>				
Hispanic	2.85	2.61	1,027,408	255
Non-Hispanic	2.88	2.71	9,227,608	1,816
F(2,67)	0.13	0.55		
<u>TOTAL PRIMARY MALE ANALYTIC SAMPLE</u>	2.88	2.69	10,255,089	2,082

Note: Means are weighted data based on the number of respondents presented in the Unweighted Count column.

\* $p < .05$ .

available ( $\chi^2(2)=10.3$ ,  $p<.05$ ), the Delayed Entry Program ( $\chi^2(2)=8.0$ ,  $p<.05$ ), and the general knowledge that educational benefits can be earned by enlisting in the Army ( $\chi^2(2)=17.8$ ,  $p<.05$ ). The remaining two active Army knowledge items show smaller differences, though the percentages responding correctly are higher among those with unaided and aided recall than those with no recall. It is worth noting that neither the minimum length of a tour of duty nor the comparison of Army educational benefits with those of other services is a major advertising copypoint. The final row in Table 92 shows the mean of the active Army knowledge indicator by recall category. The indicator average among youth who recalled Army ads without aid is 2.92 but only 2.35 for those who did not recall Army ads at all. These findings imply that recall of Army advertising is associated with increased knowledge and a broader range of knowledge about the benefits and offers of the active Army.

Table 92

Percentages of Primary Male Analytic Sample Youth who Correctly Answer Knowledge Questions and Means of Army Knowledge Indicator by Recall of Army Ads

Knowledge Items	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	
	Percentages				$\chi^2(2)$
Army Offers					
College Money?	84.69	92.87	95.65	10.96	17.8*
Amount Army					
Education Benefits	13.40	19.58	27.45	14.05	10.3*
GI Bill - Army	67.40	77.30	87.93	20.53	32.5*
Army Benefits					
More?	6.88	13.53	15.28	8.40	4.1
Minimum Years	36.89	41.15	39.81	2.92	0.4
Delayed Entry					
Program	74.17	83.40	85.99	11.82	8.0*
	Means				
F(3,66)					
Army Knowledge					
Indicator (Mean)	2.35	2.72	2.92	0.57	4.4 <sup>a</sup> *

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>F(3,66)=4.38,  $p < .05$ .

\* $p < .05$ .

Tables 93 and 94 show little apparent difference in knowledge about the benefits and offers of the Army Reserve and Army National Guard among youth who recalled advertising by the USAR and ARNG as compared to those who did not recall such ads. Only the general knowledge that college money can be earned by enlisting in the USAR or ARNG is related to recall of USAR ads ( $\chi^2(2)=7.9$ ,  $p < .05$ ) while none of the items relate to recall of ARNG ads. Similarly, the mean number of correct responses to questions about the USAR and ARNG does not differ appreciably as a function of recall category. These findings suggest at least two possible interpretations. It was reported in Chapter 8 of this report that perceptions of the ARNG are related to recall of ARNG ads (Gaertner & Greenlees, Recall of Army Advertising). Thus, there do appear to be some effects of USAR and ARNG advertising. Since these effects appear to be attitudinal rather than

informational, one might hypothesize that USAR and ARNG advertising is not informationally intense. It may be that knowledge about the USAR and ARNG comes from sources other than advertising, such as direct contact with recruiters. Alternatively, youth may have learned from advertising even if they no longer recall the ads. This possibility is related to the " sleeper effect " reported in the persuasion literature (Gruder, Cook, Hennigan, Flay, Allessis and Halamaj, 1978). This occurs when individuals dissociate the source of a message over time from the content of the message. In any case, there is little apparent relationship between advertising recall and knowledge of USAR/ARNG benefits and offers.

Table 93

Percentages of Primary Male Analytic Sample Youth who Correctly Answer Knowledge Questions and U.S. Army Reserve (USAR)/Army Reserve National Guard (ARNG) Knowledge Indicator by Recall of USAR Ads

Knowledge Items	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	
	Percentages				$\chi^2(2)$
USAR/ARNG Offers College Money?	81.05	87.13	87.75	6.70	7.9*
Amount USAR/ARNG Ed. Benefit	8.84	10.51	6.77	-2.07	2.3
H.S. Junior Eligible?	63.54	63.14	62.20	-1.34	0.1
H.S. Graduation Required?	78.34	81.49	77.03	-1.31	2.5
Scholar-Athlete Awards	28.43	31.89	30.95	2.52	1.4
	Means				F(3,66)
USAR/ARNG Knowledge Indicator (Mean)	2.60	2.75	2.63	0.03	0.22 <sup>a</sup>

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>F(3,66).

\*p<.05.

Table 94

Percentages of Primary Male Analytic Sample Youth who Correctly Answer Knowledge Questions and Means of U.S. Army Reserve (USAR)/Army Reserve National Guard (ARNG) Knowledge Indicator by Recall of ARNG Ads

Knowledge Items	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3) - (1)	
	Percentages				$\chi^2(2)$
USAR/ARNG Offers College Money?	83.00	87.63	84.33	1.33	4.9
Amount USAR/ARNG Ed. Benefit	8.77	10.14	10.04	1.27	0.6
H.S. Junior Eligible?	62.40	63.74	62.72	.32	0.2
H.S. Graduation Required?	78.37	81.51	79.59	1.22	1.7
Scholar-Athlete Awards	29.24	32.35	29.40	.16	1.4
	Means				F(3,66)
USAR/ARNG Knowledge Indicator (Mean)	2.61	2.77	2.65	.04	.41 <sup>a</sup>

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>F(3,66).

\*p<.05.

#### Knowledge of Army Offers and Source of Recalled Army Advertising

During the ACOMS interview, youth who said that they remembered Army advertising (either unaided or aided) were asked if they had seen or heard the ads in any of 10 possible advertising sources. These sources included television, radio, magazines, newspapers, billboards, direct mail, posters, pamphlets, the yellow pages, and a catchall "other" category.

A comparison of ad sources, with respect to knowledge of the Army's benefits and offers, could be important to Army advertising managers. Such information could be valuable in deciding the type and content of advertising to be placed in each medium. The percentages of youth who answered each of the knowledge questions correctly are presented in Table 95 by advertising sources for youth who mentioned the source and those who did not. We have shown  $\chi^2$ s for tests of the differences between those who did and did not mention the source. Only youth who recalled Army advertising are included in this table.



Table 95

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions Among Those Who Recall Army Ads by Source of Advertising

Source	Recall	Unweighted Count	Army Offers College Money	Amount Army Ed. Benefits	Army Benefits More?	GI Bill Army	Minimum Years	Delayed Entry Program
TV	Mentioned	1944	95.2	26.4	14.7	86.9	40.6	85.7
	Not Mentioned $\chi^2(1)$	71	95.9 0.1	24.6 0.1	15.4 0.0	73.9 7.1*	33.5 1.0	79.8 1.4
Radio	Mentioned	1232	95.7	28.7	15.8	87.8	42.6	87.9
	Not Mentioned $\chi^2(1)$	776	94.3 1.3	22.5 6.0*	13.2 1.6	83.9 3.9*	37.0 3.9*	82.1 8.5*
Magazines	Mentioned	1714	95.9	28.3	15.0	88.0	41.3	85.9
	Not Mentioned $\chi^2(1)$	776	91.5 7.4*	16.5 12.7*	13.4 0.4	78.3 14.0*	35.5 2.6	83.3 1.0
Newspapers	Mentioned	561	96.2	29.7	14.9	89.6	38.6	85.0
	Not Mentioned $\chi^2(1)$	1447	94.8 1.2	25.1 2.8	14.6 0.0	85.0 4.5*	41.1 0.6	85.6 0.1

\* $p < .05$ .

(table continues)

Table 95

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions Among Those Who Recall Army Ads by Source of Advertising (continued)

Source	Recall	Unweighted Count	Army Offers College Money	Amount Army Ed. Benefits	Army Benefits More?	GI Bill Army	Minimum Years	Delayed Entry Program
Billboards	Mentioned	1371	96.0	26.0	16.6	88.0	40.9	87.1
	Not Mentioned	640	93.5	27.0	10.8	82.9	39.3	82.4
	$\chi^2(1)$		3.9*	0.1	7.4*	6.2*	0.3	4.9*
Mail	Mentioned	1405	95.7	27.6	15.7	86.5	41.5	86.3
	Not Mentioned	606	94.0	23.3	12.7	86.1	38.2	84.0
	$\chi^2(1)$		1.7	2.8	1.9	0.1	1.2	1.1
Posters	Mentioned	1484	96.1	26.3	15.7	87.2	39.5	86.0
	Not Mentioned	529	92.6	26.4	12.0	83.8	43.0	84.3
	$\chi^2(1)$		6.7*	0.0	2.7	2.4	1.3	0.6
Pamphlets	Mentioned	1420	96.5	28.1	15.9	89.4	40.0	86.0
	Not Mentioned	592	92.3	22.4	12.0	79.7	41.1	84.2
	$\chi^2(1)$		10.2*	4.6*	3.3	21.7*	0.1	0.6
Yellow Pages	Mentioned	204	95.6	31.2	14.4	90.4	32.5	86.4
	Not Mentioned	1802	95.1	25.7	14.5	85.8	41.4	85.5
	$\chi^2(1)$		0.1	1.8	0.0	2.2	3.9*	0.1
Other	Mentioned	250	95.3	31.4	17.7	92.4	40.6	83.2
	Not Mentioned	1756	95.2	25.6	14.3	85.7	40.4	86.1
	$\chi^2(1)$		0.0	2.5	1.4	5.7*	0.0	1.0

\*p&lt;.05

(table continues)

Table 95

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions Among Those Who Recall Army Ads by Source of Advertising (continued)

Source	Recall	H.S. Junior Eligible?	H.S. Grad. Required?	Scholar- Athlete Award	Reserve/ National Guard		
					Offer College Money?	Ed. Benefits	
TV	Mentioned	62.9	80.2	31.8	86.5	9.9	
	Not Mentioned $\chi^2(1)$	73.9 2.6	86.9 1.4	18.8 3.9*	75.7 4.8*	4.7 1.5	
Radio	Mentioned	64.9	79.5	31.7	85.6	9.9	
	Not Mentioned $\chi^2(1)$	61.0 2.0	81.9 1.1	31.0 0.1	86.5 0.2	9.4 0.1	
Magazines	Mentioned	65.0	81.1	31.8	86.8	9.8	
	Not Mentioned $\chi^2(1)$	55.0 7.6*	77.3 1.6	28.7 0.8	82.1 3.3	9.0 0.1	
Newspapers	Mentioned	67.2	84.3	34.4	86.9	10.1	
	Not Mentioned $\chi^2(1)$	61.8 3.1	79.0 4.6*	30.2 2.2	85.7 0.3	9.5 0.1	

\*p&lt;.05

(table continues)

Table 95

Percentages of Primary Male Analytic Sample Youth Who Correctly Answer Knowledge Questions Among Those Who Recall Army Ads by Source of Advertising (continued)

Source	Recall	H.S. Junior Eligible?	H.S. Grad. Required?	Scholar- Athlete Award	Reserve/ National Guard		
					Offer College Money?	Ed. Benefits	
Billboards	Mentioned	64.3	81.5	32.4	85.6	10.1	
	Not Mentioned	61.4	78.5	29.9	87.2	8.9	
	$\chi^2(1)$	1.0	1.6	1.5	0.6	0.5	
Mail	Mentioned	65.6	81.5	31.5	86.8	9.4	
	Not Mentioned	58.4	78.3	30.9	84.3	10.4	
	$\chi^2(1)$	6.0*	1.8	0.1	1.4	0.3	
Posters	Mentioned	63.2	80.9	32.4	85.8	9.5	
	Not Mentioned	63.4	79.1	28.0	86.7	10.3	
	$\chi^2(1)$	0.0	0.5	2.3	0.2	0.2	
Pamphlets	Mentioned	65.2	82.4	33.2	87.6	9.2	
	Not Mentioned	59.6	76.2	27.3	82.8	10.7	
	$\chi^2(1)$	3.6*	6.7*	4.4*	5.2*	0.7	
Yellow Pages	Mentioned	67.2	85.9	28.9	88.1	8.7	
	Not Mentioned	62.9	79.9	31.4	85.9	9.9	
	$\chi^2(1)$	0.9	2.8	0.3	0.5	0.2	
Other	Mentioned	69.1	83.5	38.4	81.6	12.5	
	Not Mentioned	62.7	80.2	30.3	86.7	9.3	
	$\chi^2(1)$	2.6	1.0	4.5*	3.1	1.7	

\* $p < .05$

However, few are excluded since combined unaided and aided recall of Army ads is very high (93.6%).

One possibility is that print media, such as magazines, newspapers, pamphlets and direct mail, are better transmitters of specific information while time-restricted media such as television, radio, posters, and billboards are better for general information. There is little evidence to support this hypothesis. The largest number of significant differences in correct responses was found for pamphlets since 7 of the 11 knowledge items were significantly more likely to be answered correctly by youth who recalled seeing Army advertising in pamphlets than those who did not. However, both general and specific information is better recalled by pamphlet readers than nonreaders. While youth who recall seeing Army advertising in magazines are more likely to know the amount of active Army educational benefits (specific knowledge), so are youth who recall radio advertising. Additionally, specific knowledge about the Scholar-Athlete Award is more likely among youth who recall TV ads compared with those who do not, and knowledge of the DEP is more likely among youth who recall radio ads and billboards than those who do not recall these advertising sources. Thus, there is no evidence that print media are better transmitters of specific information than time-restricted media. There is, however, an indication that Army pamphlets are particularly good information transmitters.

#### Knowledge of Army Offers and Perceptions of the Army

Table 96 presents the percentages of respondents with positive perceptions of the active Army broken out by whether or not they were able to answer the various knowledge items correctly. For purposes of this analysis, we measured perceptions of the Army simply by averaging the active Army perceptions items, and considering responses averaging "agree" (4) or higher to be favorable. Note that we assume that the perceptions questions referring to "the Army offers..." refers to the active Army. The findings suggest that respondents who were knowledgeable about the Army's offers were more favorable toward the Army than respondents who were less knowledgeable. The largest effects are associated with college education benefits. Thus, 51.8% of those who were aware that the Army offers money for education had positive perceptions of the Army, compared with 30.3% of those who were not aware of Army college benefits, a difference of 21.5% ( $\chi^2(1)=11.6$ ,  $p<.05$ ). The differences for knowledge that the Army offers the GI Bill and that the Army's college benefits offers are larger than other services' are nearly as large ( $\chi^2(1)=18.9$  and  $13.3$ , respectively,  $p<.05$ ). A smaller effect is associated with knowledge of the amount of Army college benefits ( $\chi^2(1)=4.1$ ,  $p<.05$ ). Knowledge of minimum tour of duty is associated with negative perceptions of the Army ( $\chi^2(1)=7.1$ ,  $p<.05$ ). Thus, while the last row of the table suggests that the indicator measuring knowledge of the Army's offers is positively associated with perceptions ( $\chi^2(1)=20.4$ ,  $p<.05$ ), it seems clear that it is the knowledge of educational benefits that is most closely associated with positive perceptions.

Table 96

Percent Favorable Perceptions of Active Army Among Primary Male  
Analytic Sample Youth Whose Answers Are Correct and Incorrect

	Percentage favorable <sup>a</sup> Among Those Whose Answers Are			
	Incorrect	Correct	Difference	$\chi^2(1)$
<u>Active Army Knowledge</u>				
<u>Items</u>				
Army Offers College				
Money?	30.30	51.76	21.46	11.6*
Amount Ed. Benefits	48.97	55.57	6.60	4.1*
Army Benefits More?	48.53	63.40	14.87	13.3*
GI Bill-Army	35.52	53.16	17.64	18.9*
Minimum Years	53.67	45.94	-7.73	7.1*
Delayed Entry Program	46.77	51.25	4.48	1.3

	Percentage Favorable <sup>a</sup> Among Those Whose Overall Knowledge Is			
	Low (1.00-2.30)	Medium (2.34-3.66)	High (3.67-5.00)	High-Low Difference $\chi(2)$
Active Army				
Indicator	37.44	52.60	57.30	19.86 20.4*

Note. Percentages are weighted data based on 1,970 respondents.

<sup>a</sup>"Favorable" is average perception agree or strongly agree.

\* $p < .05$ .

Table 97 reports the relationships between knowledge of Reserve offers and favorability of USAR perceptions. Army Reserve perceptions are scored as favorable if the average response was "agree" (4) or higher. Interestingly, knowledge that the Reserve offers money for college is less strongly associated with perceptions of the Reserve than was the case for the Army. Favorable perceptions of the USAR are not significantly more likely among youth who answer the USAR/ARNG questions correctly than those who answer incorrectly. For example, the difference in perceptions between those who realized that the Reserve offers money for college (34.1% favorable) and those who did not (30.3%) is comparatively small (3.8%) compared with the larger difference for the active Army (21.5% in Table 96). Knowledge of Reserve college benefits is less important to perceptions of the USAR than is the case for the active Army, suggesting that college benefits offers may be a less important buying motive for the Reserve than for the active Army. If so, one interpretation could be that those favorable to the Reserve may be less interested in money for college,

so that knowledge of college offers is less critical to positive perceptions. However, knowledge of high school junior eligibility, that high school graduation is not required, and that the Reserve offers the Scholar-Athlete Award are not closely associated with favorable USAR perceptions either.

Table 97

Percent Favorable Perceptions of the Army Reserve among Primary Male Analytic Sample Youth Whose Answers are Correct and Incorrect

<u>Percentage Favorable<sup>a</sup> Among Those Whose Answers Are</u>				
	Incorrect	Correct	Difference	$\chi^2(1)$
<u>U.S. Army Reserve (USAR)/</u>				
<u>Army National Guard (ARNG)</u>				
<u>Knowledge Items</u>				
USAR/ARNG Army Offers				
College Money?	30.34	34.13	3.79	0.2
Amount USAR/ARNG Ed.				
Benefits	32.40	44.93	11.53	1.3
H.S. Junior Eligible?	31.21	34.69	3.48	0.3
H.S. Graduation Required?	27.20	34.65	7.65	0.7
Scholar-Athlete Award	31.97	37.79	5.82	0.7

<u>Percentage Favorable<sup>a</sup> Among Those Whose Overall Knowledge Is</u>					
	Low (1.00-2.30)	Medium (2.34-3.66)	High (3.67-5.00)	High-Low Difference	$\chi(2)$
USAR/ARNG					
Indicator	30.09	34.66	37.28	7.19	0.8

Note. Percentages are weighted data based on 347 respondents.

<sup>a</sup>"Favorable" is average perception agree or strongly disagree.

#### Knowledge-Image Responses and Perceptions of the Army

We previously noted that several knowledge items seem closely associated with respondents' image of Army personnel. These included an estimated proportion of new recruits having high school diplomas; an estimate of the proportion who would score in the upper half of an intelligence test; and an estimate of the proportion who will eventually receive college degrees. We noted in the previous discussion that knowledge of the correct answers was unlikely to be

widespread or based either in the Army's advertising or in common knowledge. As such, these items might be expected to measure the image of Army recruits, and we might expect that favorable opinions of Army recruits would be closely associated with favorable perceptions of the Army. As the data in Table 98 suggest, this is the case.

Table 98 presents the percentages of PMAS respondents who had favorable perceptions of the active Army, the Army Reserve, and the Army National Guard in terms of their responses to the three image questions. As hypothesized, favorable perceptions of the active Army were linked to favorable images of new recruits. For example, of those youth who responded that less than a quarter of new recruits are high school graduates, only 35.8% have favorable perceptions of the active Army. This compares with 58.5% favorable among those who thought that almost all of the new recruits are high school graduates. We also found that very unfavorable images of new recruits are comparatively rare. For example, only 3.8% of PMAS thought that less than a quarter of new recruits are high school graduates, and only 15.1% placed the proportion at a quarter. For the intelligence test question, among youth who thought all new recruits would score above average, 69.2% had favorable perceptions of the Army compared with 28.5% of those who thought none of the new recruits would score above average ( $\chi^2(4)=82.4$ ,  $p<.05$ ). Of those youth who thought almost all new recruits will eventually receive their college degrees, a larger percentage is favorable to the Army than those who thought less than one-quarter will receive their degrees ( $\chi^2(4)=77.4$ ,  $p<.05$ ).

Finally, we find that responses to the image questions are not quite as systematically associated with favorability toward the ARNG and USAR. Differences are generally smaller and not as consistent. No significant differences in favorability are found for either the USAR or ARNG on the high school diploma question. There are, however, significant differences for both on the other two questions though the effects are not as large as those observed for the active Army. There are two plausible explanations for this pattern of findings. First, the questions could be interpreted by the respondents as referring to new active Army recruits. Thus, relationships with other components' images might be attenuated. Second, it may be that the images of the Army Reserve and National Guard are less dependent on the quality of incoming recruits. Differences between active Army and USAR and ARNG images have been described in other ACOMS analysis chapters. See, for example, Chapter 4 of this report (Wilson, Greenlees, & Davis, 1988). Nevertheless, the connections between image and perceptions apply most strongly to the active Army and, while present for the USAR or ARNG on two of the three questions, the effects are attenuated.

In summary, we find that perceptions of the Army are linked to knowledge of the Army's offers, especially knowledge of educational benefits. Further, knowledge of the Army Reserve's offers is linked to perceptions of the Reserve, although this linkage is less strong than that found for the active Army. Favorable images of the Army's new recruits are also closely linked to positive perceptions of the Army's offers. Interestingly, perceptions of the Reserve and the National Guard are less dependent on these images of new recruits.



Table 98

Percentages of Primary Male Analytic Sample Youth with Favorable Perceptions of Components by Levels of Army Image

Percentage with Favorable Perceptions <sup>a</sup> of Component among those whose Image is ...						
<u>What percentage of new recruits have H.S. diplomas?</u>						
<u>Perceptions</u>	<1/4	1/4	1/2	3/4	Almost all <sup>b</sup>	$\chi^2(4)$
Active Army	35.8	44.7	45.9	49.5	58.5	33.7*
U.S. Army Reserve	52.1	33.4	28.3	30.8	40.7	7.4
Army National Guard	17.0	35.0	31.4	29.4	43.1	6.7

<u>What percentage of new recruits score in the upper half of an intelligence test?</u>						
	None	1/4	1/2 <sup>a</sup>	3/4 <sup>b</sup>	All	$\chi^2(4)$
Active Army	28.5	35.8	49.4	60.2	69.2	82.4*
U.S. Army Reserve	5.3	20.7	36.5	40.7	34.1	10.1*
Army National Guard	26.3	17.2	32.4	56.0	32.8	36.7*

<u>What percentage of new recruits will eventually receive their college degrees?</u>						
	<1/4	1/4 <sup>b</sup>	1/2 <sup>b</sup>	3/4	Almost all	$\chi^2(4)$
Active Army	35.0	40.9	50.4	60.7	62.7	77.4*
U.S. Army Reserve	26.5	36.4	32.0	31.5	41.9	32.8*
Army National Guard	23.5	31.7	30.7	43.8	52.5	9.9*

Note: Percentages are weighted data based on the following number of respondents: active Army = 3849, USAR = 664, ARNG = 644.

<sup>a</sup>Favorable is average perception agree or strongly agree. <sup>b</sup>Correct Answers.

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### Knowledge of Army Offers and Enlistment Intentions

Tables 99, 100, and 101 present the percentages of youth intending to enlist among those who answered questions about the active Army (Table 99), the USAR (Table 100), and the ARNG (Table 101) correctly and incorrectly. Youth are considered to have enlistment intentions toward a component if they indicate that they will definitely or probably enlist when asked specifically about their likelihood of enlisting in that component (Aided Intention).

The data in Table 99 indicate a greater percentage of youth intend to enlist among those who answered correctly that the Army offers more in educational benefits than the other services ( $\chi^2(1)=14.5$ ,  $p<.05$ ); that the Army offers the GI Bill ( $\chi^2(1)=12.9$ ,  $p<.05$ ); and the amount of educational benefits available in the Army ( $\chi^2(1)=6.3$ ,  $p<.05$ ). These findings suggest that active Army enlistment intention may be related to knowledge of Army benefits and offers but do not indicate the direction of causality in the relationship. The association could indicate that youth who have decided to enlist selectively seek information about Army benefits and offers. It could also be that knowledge of the Army's benefits and offers may lead to the enlistment decision.

Table 99

Percentages of Primary Male Analytic Sample Youth who Intend to Enlist in the Active Army among those Who Answer Active Army Knowledge Questions Correctly and Incorrectly

<u>Percentage Intending To Enlist<sup>a</sup> Among Those Whose Answers Are:</u>				
Knowledge Items	Correct	Incorrect	Difference	$\chi^2(1)$
Army Offers College Money?	14.68	13.14	1.54	0.1
Amount Ed. Benefits	18.80	13.16	5.64	6.3*
GI Bill-Army	16.05	5.99	10.06	12.9*
Army Benefits More?	23.58	13.04	10.54	14.5*
Minimum Years	13.84	15.11	-1.27	0.4
Delated Entry Program	14.01	18.01	-4.00	2.1

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>Intention to enlist defined as responding probably or definitely when asked how likely it is that they will serve on active duty in the Army.

\*  $p<.05$ .

The association between enlistment intentions and knowledge does not persist for the USAR and ARNG. The data in Tables 100 and 101 respectively suggest that those youth correctly answering questions about the USAR and ARNG are neither more nor less likely to intend to enlist than those youth answering the questions incorrectly.

Table 100

Percentages of Primary Male Analytic Sample Youth Who Intend to Enlist in the USAR Among Those Who Answer USAR/ARNG Questions Correctly and Incorrectly

Knowledge Items	<u>Percentage Intending To Enlist<sup>a</sup> in the U.S. Army Reserve Among Those Whose Answers Are</u>			
	Correct	Incorrect	Difference	$\chi^2(1)$
U.S. Army Reserve (USAR)/ Army National Guard (ARNG) Offers				
College Money?	13.79	14.89	-1.10	0.2
Amount USAR/ARNG Ed. Benefits	11.82	14.20	-2.38	0.5
H.S. Junior Eligible?	13.90	14.05	-0.15	0.0
H.S. Graduation Required?	14.62	11.22	3.40	2.0
Scholar-Athlete Award	14.31	13.80	0.51	0.1

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>Intention to enlist defined as responding probably or definitely when asked how likely it is that they will enlist in the Army Reserve.

Table 101

Percentages of Primary Male Analytic Sample Youth Who Intend to Enlist in the Army Reserve National Guard Among Those Who Answer U.S. Army Reserve (USAR)/Army National Guard (ARNG) Questions Correctly and Incorrectly

Knowledge Items	<u>Percentage Intending To Enlist<sup>a</sup> in the U.S. Army Reserve Among Those Whose Answers Are</u>			
	Correct	Incorrect	Difference	$\chi^2(1)$
USAR/ARNG Offers				
College Money?	11.22	12.09	-0.87	0.1
Amount USAR/ARNG Ed.				
Benefits	10.57	11.43	-0.86	0.1
H.S. Junior Eligible?	11.09	11.77	-0.68	0.1
H.S. Graduation Required?	11.67	9.98	1.69	0.6
Scholar-Athlete Award	9.72	12.06	-2.34	1.5

Note. Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>Intention to enlist defined as responding probably or definitely when asked how likely it is that they will enlist in the Army National Guard.

Table 102 contains the percentages of youth intending to enlist in the active Army, USAR, and ARNG by the level of favorability toward Army personnel as measured by their responses to the Knowledge-Image questions. Youth who estimated that three-fourths or more of new Army recruits score in the upper half of an intelligence test and will receive their college degrees are significantly more likely to have enlistment intentions with respect to the active Army, USAR, and ARNG than those whose estimates were lower. For example, among youth who thought that three-quarters or more of the current Army recruits would score in the upper half of an intelligence test, 17.95% intend to enlist in the active Army. Among those whose estimates were one-quarter or less, only 11.15% have active Army enlistment intentions ( $\chi^2(2)=14.8$ ,  $p<.05$ ). The relationship between enlistment intention and response favorability is not significant for estimates of the proportion of new recruits with high school diplomas. However, in general, these data suggest there is a link between the image of Army personnel and the likelihood of enlistment intention. Again, the direction of causality cannot be determined from these data.

#### Knowledge of Army Offers and Benefits and Enlistment-Related Behavior

The possibility of a link between knowledge of Army offers and benefits and enlistment-related behavior was explored by comparing the indicators of active Army knowledge and USAR/ARNG knowledge with three

Table 102

Percentages of Primary Male Analytic Sample Youth Intending to Enlist  
in Army Components by Image of Army Personnel

Percentage intending to enlist<sup>a</sup> in Army  
Component among those who answer:

What percentage of new recruits have  
H.S. diplomas?

	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
<u>Army Components</u>				
Active Army	14.81	12.24	13.29	2.8
U.S. Army Reserve (USAR)	14.72	12.81	14.11	1.5
Army National Guard (ARNG)	12.03	12.21	10.77	0.7

What percentage of new recruits score in  
the upper half of an intelligence test?

	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
Active Army	17.95	12.73	11.15	14.8*
USAR	19.05	11.91	12.69	20.2*
ARNG	16.47	10.39	9.56	19.9*

What percentage of new recruits will  
eventually receive their college degrees?

	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
Active Army	17.20	13.29	11.56	11.2*
USAR	17.41	14.73	10.80	15.5*
ARNG	15.36	11.14	9.81	12.7*

Note: Percentages are weighted data based on 2,082 respondents.

<sup>a</sup>Intention to enlist defined as responding probably or definitely when asked how likely it is that they will enlist in the specified Army component.

\*p<.05.

behavior scales. These measured the average number of actions taken within the past six months by youth in regard to Army enlistment, college entrance, and a civilian job. These comparisons are discussed in Chapter 10 of this report (Gaertner & Greenlees, Behaviors relating to career choice, 1988). Table 103 presents the average number of Army-, college-, and work-related behaviors undertaken by youth who correctly answered fewer than the average knowledge questions as compared with those who correctly answered more than the average knowledge questions. These comparisons are first made for active Army knowledge, and second, for USAR/ARNG knowledge. These findings suggest that youth who were above the mean in knowledge about the active Army and about the USAR/ARNG have undertaken significantly more Army enlistment-related actions in the past six months than youth who were below the mean ( $Z=4.520$  and  $4.213$  respectively,  $p<.05$ ). Youth who were above the mean in active Army knowledge are also more likely than those below the mean to have undertaken college-related actions ( $Z=4.63$ ,  $p<.05$ ). Again, the direction of causality cannot be ascertained from these data. It is possible that youth with more information about the Army are more likely to take action on this information (although this would not explain the finding that youth with more Army knowledge take more college-related action). It is perhaps most likely that youth who are actively engaged in making a career choice both seek information about possible paths, (including Army enlistment) and take actions such as those enlistment- and college-related actions included in the scales. It may also be that youth who answer more questions correctly are more intelligent and those youth who are more intelligent are more active in pursuing their career choices.

Table 103

Mean Numbers of Army-, College-, and Work-Related Behaviors by Knowledge Level for Primary Male Analytic Sample Youth

Knowledge Items	<u>Mean Numbers of Behaviors Related To</u>		
	Army	College	Work
<u>Knowledge of Active Army</u>			
Above Average	1.414	2.182	1.636
Below Average	1.093	1.750	1.600
<u>Z</u>	4.520*	4.634*	0.293
<u>Knowledge of USAR/ARNG</u>			
Above Average	1.370	1.997	1.640
Below Average	1.054	1.882	1.579
<u>Z</u>	4.213*	0.885	0.526

Note. Percentages are weighted data based on 2,082 respondents.

\* $p < .05$ .

The average enlistment-related actions taken by those youth whose responses to the Knowledge-Image questions indicate high, medium, and low levels of favorability toward Army personnel are found in Table 104.

For two of the three Knowledge-Image questions, those pertaining to new recruits' high school diplomas and intelligence test scores, more enlistment-related actions are undertaken by youth with more favorable images of Army personnel. An average of 1.35 Army enlistment-related behaviors are undertaken by youth who estimated that three-fourths or more of new Army recruits have their high school diplomas compared with an average of .98 enlistment-related actions by those who estimated one-fourth or less have high school diplomas ( $F(3,66)=11.76$ ,  $p < .05$ ). Similarly, more enlistment-related actions are undertaken by youth who estimated three-fourths or more of new recruits would score in the upper half of an intelligence test ( $M=1.42$ ) than those who estimate one-fourth or less ( $M=1.01$ ) ( $F(3,66)=15.28$ ,  $p < .05$ ). This relationship is not apparent in the youths' estimates of proportions of new recruits who will obtain their college degrees. The relationship between action and favorability of Army personnel image is not shown for college activities on any of the Knowledge-Image questions, although more work-related actions are undertaken by youth with higher estimates of the proportions of new recruits who have their high school diplomas ( $F(3,66)=3.51$ ,  $p < .05$ ) and

Table 104

Percentages of Primary Male Analytic Sample Youth Reporting Enlistment-, College-, and Work-Related Actions by Image of Army Personnel

<u>What percentage of new recruits have H.S. diplomas?</u>				
<u>Behavior Related to</u>	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
Army enlistment	1.35	1.25	0.98	11.76*
College enrollment	1.90	2.04	1.98	1.52
Job application	1.72	1.61	1.32	3.51*
<u>What percentage of new recruits score in the upper half of an intelligence test?</u>				
<u>Behavior Related to</u>	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
Army enlistment	1.42	1.26	1.01	15.28*
College enrollment	2.04	1.90	1.99	0.62
Job application	1.83	1.52	1.50	3.21*
<u>What percentage of new recruits will eventually receive their college degrees?</u>				
<u>Behavior Related to</u>	<u>Almost All &amp; Three-Fourths</u>	<u>One-Half</u>	<u>One-Fourth or Less</u>	$\chi^2(2)$
Army enlistment	1.16	1.34	1.24	0.25
College enrollment	1.99	1.98	1.91	0.38
Job application	1.66	1.62	1.59	0.75

Note: Percentages are weighted data based on 2,082 respondents.

\* $p < .05$ .



who would score in the upper half of an intelligence test ( $F(3,66)=3.21, p<.05$ ). No explanation of the latter findings is immediately apparent. These results suggest that youth with more favorable images of Army recruits may be more likely to take steps toward enlisting. Again, the direction of causality cannot be inferred from these findings.

### Summary and Discussion

This chapter has investigated the levels and patterns in the distribution of knowledge of the Army's offers and benefits within the Army's main enlisted recruiting markets.

The findings suggest that knowledge of the active Army and the Army Reserve and National Guard offering educational benefits and delayed enlistment is widespread in the youth market. However, specific knowledge about the amount of educational benefits and the length of service is less widespread. One major exception is the Delayed Entry Program, which is both widely known and relatively specific in content.

Although there are few differences in the overall knowledge of Army offers by market segment, there is some reason to believe that those groups positioned to make use of an offer are more knowledgeable about the offer. For example, college students and college-oriented high school students are more likely than work-oriented high school students or nonenrolled high school graduates to know the maximum educational benefits offered by the Army although they are not more likely to be generally knowledgeable about the Army's offers. Knowledge of active Army and Army Reserve and National Guard benefits and offers does not seem to vary systematically over the year.

Intercorrelations of knowledge items indicate that all items cannot be reliably combined to form a single scale of Army benefits and offers knowledge. As an aid to the discussion of separate Army components, indicators of active Army and USAR/ARNG knowledge were created by summing the correct answers given to questions relating to the active Army and USAR/ARNG offers respectively, and respondents with more correct answers for a component were assumed to be more knowledgeable about that component. These indicators were then used in subsequent analyses as summary knowledge measures.

The results suggest that much knowledge of active Army offers is gained from, or at least associated with, advertising. Those with recall of active Army advertising are more likely to be knowledgeable about Army offers than those who do not recall the advertising. Further, the particular items most affected by recall figure prominently in the copy points for many Army ads: that one can earn money for college in the Army (and the amount), and that the Army offers the GI Bill. Points less prominent in Army advertising (e.g., length of tour) are less affected by recall. Further, there is some evidence that knowledge of the amount of college education benefits is linked to recall of magazine advertising. Previous analyses of the message content of Army advertising (Gaertner & Baxter, 1987) found that the

theme of education benefits is distinctive in Army print advertising. However, there is little overall confirmation for the supposition that print advertising specializes in information-intensive communication.

Knowledge of USAR and ARNG offers is not closely associated with recall of Reserve or National Guard advertising. It may be that their advertising is less informationally intensive, or that knowledge of USAR/ARNG offers is more diffusely related to advertising.

Knowledge of the Army's offers is related to positive perceptions of the active Army. Respondents who were knowledgeable about Army education benefits were more likely to have favorable perceptions of the Army than respondents who were unaware of the benefits. However, favorability is negatively related to correct responses about the length of enlistment tour. Further, knowledge of USAR offers is not associated with favorable perceptions of the Army Reserve. ACOMS interviews also contained several questions which are more closely linked with the image of new recruits in the Army than with factual information on Army benefits and offers. Responses to these image questions were closely linked with perceptions of the active Army. Perceptions of the USAR and ARNG are less closely associated with images of new recruits, either because there was little connection seen between new recruits and the USAR/ARNG, or because perceptions of these components were seen as less dependent on the quality of recruits.

Knowledge of active Army offers also seems linked to enlistment-related actions and intentions. The linkage, like that found in relating enlistment-related actions and recall of advertising (Gaertner & Greenlees, Recall of Army Advertising, 1988), is not entirely straightforward. It is true that youth undertaking enlistment-related activities are more knowledgeable about active Army offers than those not active in enlistment-related behavior. However, it is also true that youth undertaking college planning are more knowledgeable about Army offers than youth not engaged in enrollment activities. Thus, to establish a causal connection between knowledge of offers and enlistment behaviors, we need to control for overall youth career-planning activity and perhaps youth general knowledge and intelligence. Even then, without longitudinal data, we cannot reject the hypothesis that youth gain knowledge as they begin the enlistment process. However, the relationship between knowledge of Army offers and intention to enlist in the Army suggests some informational connection with enlistment intention.

The results reported in this paper are supportive of the hierarchy of effects model which posits relationships among exposure, recall, knowledge, importance/perceptions, intentions and behaviors. Previous analysis chapters have shown the links between exposure to Army advertising and perceptions of the Army (Greenlees & Gaertner, 1988), recall of advertising and perceptions of the Army (Gaertner & Greenlees, Recall 1988); and among recall, perceptions and enlistment-related behaviors and intentions (Gaertner & Greenlees, Behaviors relating to career choice, 1988). The current paper links knowledge of the Army's offers to recall of advertising (showing that knowledge

is linked to recall), perceptions (linking knowledge and image to perceptions), behaviors and intentions (linking knowledge to enlistment activity and intention). The consistent pattern of low to moderate relationships linking variables in the hierarchy of effects model found in previous analyses is shown in these results as well.

Future analyses can be directed more closely at what particular kinds of knowledge are most closely associated with attitudes of interest, both overall and in particular market segments. Additional analyses can also be directed to knowledge of ROTC offers in the ROTC officer market (a topic not covered in the current paper), and on assessments of the effects of knowledge of other services' offers on perceptions of the Army.

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## 10. BEHAVIORS RELATING TO CAREER CHOICE

Gregory H. Gaertner and James B. Greenlees

### Overview

#### Requirement

To assess levels of and patterns in the career choice behaviors of youth in the primary male enlisted market. To summarize the enlistment-related behaviors of youth in markets of interest. To assess the relationships between enlistment activity and perceptions of the Army.

#### Procedure

As part of a 30-minute interview conducted for the Army Communications Objectives Measurement System (ACOMS) between October and June 87, survey respondents were asked about actions they had undertaken with respect to college enrollment (e.g., thought about it, talked with someone, taken admissions tests, applied), civilian full-time employment (e.g., thought about it, talked with someone, visited employers, applied) and military enlistment (thought about it, spoken with someone, sent away for a gift, spoken with an Army recruiter, visited an Army recruiting station, taken the Armed Services Vocational Aptitude Battery (ASVAB)). The analyses reported in this paper are based on the responses to these questions by 4,096, 16- to 24-year-old males in the Army's primary enlisted recruiting market.

The analysis begins by reporting the proportions of respondents taking actions with respect to enlistment, work and college. Patterns of behaviors are analyzed to determine various paths toward enlistment and/or career choice evident in youth respondents. These patterns result in three scales of behaviors measuring college-, work- and enlistment-related activity. These scales are then broken out by market segment and quarter to determine levels of and trends in these various career-oriented behaviors. Finally, we correlate levels of these behaviors with measures of recall of Army advertising, with perceptions of the Army and with intentions to enlist in the Army.

#### Results

Patterns of career-choice behavior. Career-choice behaviors cluster into three career paths: enlistment, college, and work, with each behavior path composed of a hierarchy of thought, discussion, and investigation/action. Job-seeking and enrollment behaviors seem to form a tightly-linked progression of actions, with comparatively low loss rates from thought through action and to commitment. By contrast, enlistment-related behaviors seem more tenuously connected, with high loss rates at each progressive step.

Career-choice behaviors by market segment. College-enrollment behaviors are most frequently undertaken by college-oriented high school students, residents of the Northeast (1st Rctg Bde) and West

(6th Rctg Bde), and 16- to 19-year-olds, while work path behaviors are most frequently found among work-oriented high school students, residents of the Southeast (2nd Rctg Bde) and Southwest (5th Rctg Bde), Blacks, and older youth. Enlistment path behaviors are most frequent among both college and work-oriented high school students, residents of the Southeast (2nd Rctg Bde) and Southwest (5th Rctg Bde), 16-19 year-olds, and Blacks and Hispanics.

Trends in career-choice behaviors. The current analysis is limited to three quarters of data and cannot unequivocally distinguish between annual cycles and longer-term trends. However, the results suggest that college-related behaviors form an annual cycle building in the Fall toward college application deadlines in the Winter, and trailing off thereafter. Work behaviors seem to build throughout the year, evidence of either an annual cycle lagged a quarter behind the college application process, or a longer-term trend. Enlistment behaviors seem to represent an amalgam of two cycles. One cycle evidenced by work-oriented high school students and high school graduates not currently enrolled, builds in the Fall, peaks in the Winter and trails off in the Spring, similar to college enrollment behaviors. A second pattern, evidenced by segments of traditional recruiting strength (the 2nd and 5th Recruiting Brigades based in the Southeast and Southwest, respectively, by 16- and 17-year-olds, and by minorities), has enlistment-related behaviors declining throughout the year, evidence either of an annual cycle peaking in the Fall or a longer-term trend.

Relationships between career-choice behaviors and Army advertising and perceptions. The results suggest that the role of advertising in enlistment activity is two-fold. First, youth recalling advertising are more likely to undertake low-commitment actions (e.g., talking about enlistment). Second, previous results suggest that youth recalling advertising have more favorable perceptions of the Army's offers (Gaertner & Greenlees, 1988). The current analysis suggests that youth with more favorable perceptions of the Army are more likely to undertake enlistment-related behaviors. However, there is little effect of advertising on high-commitment behaviors such as visiting a recruiting station, taking the Armed Services Vocational Aptitude Battery (ASVAB).

Conclusions and future analytic directions. The results of this analysis are consistent with a model of advertising effectiveness in which favorable perceptions of Army attributes are positively associated with behaviors related to enlistment, which in turn are positively associated with intentions to enlist in the Army. However, given that the analysis relies on cross-sectional self-reports of youth behavior, we cannot yet assess the causal impacts of advertising on youth enlistment, or estimate the overall impact of advertising on subsequent behaviors.

Future analyses can focus on monitoring behaviors in key market segments to determine whether current patterns are indicative of annual cycles or longer-term trends, on specifying more closely the

effects of advertising on these behaviors, and on assessing the overall contribution of advertising in the hierarchy of effects model.

### Introduction

This chapter reports analyses of the behaviors related to career choice undertaken by youth in the Army's prime recruiting markets, based on self-reports by respondents in telephone interviews of American male youth conducted for the Army Communications Objectives Measurement System (ACOMS).

The career choice behaviors undertaken by youth are important to the Army for several reasons. First, behaviors undertaken specifically with respect to enlistment (e.g., recruiter contacts, requests for information) can be and are used by the Army as barometers indicating the state of the recruiting market and possible problems in it. Second, youth in different stages of the enlistment process are likely to be influenced by different things (advertising, mail, personal contact, etc.), so that knowledge of the sequence of enlistment activities can be used to pattern advertising strategy, especially if behaviors are shown to occur differentially across the year. Third, knowledge of the sequence of other career search activities can be used to appeal to prospects who reach dead ends in enrollment or work planning. For example, youth who intend to enter college but who discover that they cannot afford to enroll might be particularly receptive to Army appeals emphasizing educational benefits. Finally, in many models of the influence of advertising on purchase behaviors, including the Fishbein and Azjen (1975) model which has formed the basis of ACOMS, intermediate information-seeking behaviors are an important step. The links between these behaviors and perceptions of the Army and exposure to Army advertising are obviously important to assess the effects of advertising.

The initial steps in the analyses were to examine patterns of behaviors relating to enlistment, college enrollment, and gaining full-time employment, and to determine if scale summaries of these behaviors could be constructed. After developing summary measures of these career choice behaviors, differences in these behaviors by quarter, by key market segments, and over the three quarters, are assessed.

Finally, relationships between enlistment-related activities and recall of Army advertising, perceptions of the Army and intentions to enlist are assessed. The results are then summarized and directions for future analyses suggested.

### Methods

#### Sample

The analyses that follow are based on the Primary Male Analytic Sample (PMAS) of 4,096 youth interviewed between October 86 and June 87 during the first three quarters of ACOMS data collection. The PMAS is a subsample of the youth interviewed for ACOMS consisting of

males in the continental United States between the ages of 16- and 24-years who have not served or been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college Reserve Officers' Training Corps (ROTC) course; and who have not yet completed their sophomore year in college. All results are reported on the dataset weighted to represent a cross-section of American 16- to 24-year-olds. Numbers of youth actually responding are also reported in tables of results.

### Measures

ACOMS respondents were asked about a number of different behaviors which they might have undertaken with respect to enlistment. They were asked:

- (1) "Before we talked today, had you ever thought about joining the military?"
- (2) "In the past six months, have you talked with anyone about possibly joining the Army?" If the respondent replied positively, the persons talked with were coded.
- (3) "In the past six months, have you talked to an Armed Forces recruiter about military service?" If the respondent replied positively, the names of the services and circumstances of contact were elicited.
- (4) "In the past six months, have you:
  - (a) responded to an Army ad by calling a toll-free number or sending for a gift?"
  - (b) visited an Army recruiting station?"
  - (c) taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery [ASVAB]?"

Beginning in Spring Quarter, 1987, the questions about taking the ASVAB, and subsequent questions on college testing and application were separated into "Did you ever..." and (if yes) "In the last six months did you..." For purposes of this analysis, the two answers are combined so that youth who either never, or in the last six months had not, visited a recruiter were coded as not having undertaken the behavior.

Respondents who were not currently in college and who had never been to college were also asked:

- (1) "In the past six months, have you given any thought to going to college?" Respondents who had were asked the following questions.



- (2) "In the past six months, have you talked to anyone about going to college?" If the respondent answered positively, the persons talked to were coded. Further, respondents who reported talking with someone were also asked whether the persons talked about the Army College Fund (ACF), the GI Bill, ROTC scholarships and/or the Veterans Educational Assistance Package.
- (3) "In the past six months, have you taken any college admissions tests, for example, the Preliminary Scholastic Aptitude Test (PSAT), Scholastic Aptitude Test (SAT), or American College Test (ACT)?"
- (4) "In the past six months, have you submitted a college application?"

Finally, respondents who were not currently employed full-time were asked,

- (1) "In the past six months, have you given any thought to getting a full-time job?" Respondents who had were asked the following questions.
- (2) "In the past six months, have you spoken with anyone about getting a full-time civilian job?" If the response was positive, persons talked with were coded.
- (3) "In the past six months, have you visited any prospective employers or employment agencies?"
- (4) "In the past six months, have you applied for a job?"

Collectively, the three sets of questions give a fairly complete picture of the search behaviors which might be undertaken by respondents faced with the prospect of choosing among military service, continued education and civilian employment. The patterning of these search behaviors within and among the military; education and employment paths; and the relationships between these paths and Army advertising, perceptions, and intentions to enlist, are the subjects of this chapter.

Youth already enrolled in or ever enrolled in college are excluded from the analysis of college enrollment behaviors, and youth already employed full-time are excluded from the analysis of job-seeking behaviors. The exclusions for work and college are not precisely parallel, as the college questions exclude youth who were ever enrolled in college, but the work questions do not exclude those ever employed full-time. The additional exclusions for youth once but not currently enrolled in college constitute roughly 5% of the PMAS sample. Implicitly, youth already in the Army are also excluded from analysis of enlistment-related behaviors, since they are not interviewed in ACOMS. Thus, some incomparability in the samples across behaviors is necessary. We considered limiting the analysis to youth neither currently in college nor employed full-time, but this

procedure reduced the sample substantially. Further, this selection procedure created other more serious biases, in that youth (especially older youth) who are neither enrolled nor employed present a rather special population. Since the analysis is directed to youth seeking careers (either in college, work or the Army) different from those in which they are currently engaged, the incomparability of samples seemed appropriate.

### Results

The analysis is organized as follows. We begin by reporting the proportions of respondents taking actions with respect to enlistment, work and college. We then report analyses of patterns of behaviors directed at determining paths toward enlistment and/or career choice. These patterns result in three scales of behaviors measuring college-, work- and enlistment-related activity. These scales are then reported by market segment and quarter to determine levels of and trends in these various career-oriented behaviors. Finally, we show associations between levels of these behaviors and measures of recall of Army advertising, perceptions of the Army and intentions to enlist in the Army.

#### Patterns of Career-Search Behavior

Table 105 contains the percentages of PMAS youth undertaking various enlistment-, college-, and work-related behaviors. Respondents who responded negatively to the question of whether they had thought about going to college were assumed not to have undertaken any of the college-related behaviors. Further, youth currently in college were not asked any of the college-related questions. Youth who had not thought of getting a full-time job were assumed not to have undertaken any of the work-related behaviors. Youth already employed full-time were not asked the work-related behaviors. Of all PMAS youth, 24.2% were currently, or had been, enrolled in college and were therefore excluded from the college behaviors questions. Of all PMAS youth, 37.4% were currently working full-time and were excluded from the work behaviors questions.

At some time, 70.5% of PMAS respondents had thought of joining the military, very close to the 72% who had given some thought to going to college in the last six months, and more than the 49% who had thought about taking a full-time job in the last six months. While the subsequent actions are not identical for these three career paths (enlistment, college and work), the loss rate from each step to the next is higher for enlistment than for work or college. For example, 35% (24.4/70.5) of those who had thought about joining the military went on to talk with someone about it. In contrast, 76% (54.5/72.1)

Table 105

Percentage Engaging in Career-Oriented Behaviors For Primary Male  
Analytic Sample (PMAS) Youth

Behavior	%	Population Estimate	Number of Respondents
<u>Enlistment</u>			
A1 Before we talked today, had you ever thought about joining the military?	70.5	7,258,251	2,900
Have you in the past six months ...			
A2 talked with anyone about possibly joining the Army?	24.4	2,508,411	1,056
A3 talked to an Army recruiter?	13.1	1,348,471	562
A4 called a toll-free number or sent for a gift?	4.9	503,444	209
A5 visited an Army recruiting station?	6.5	669,160	279
A6 taken a written test (e.g., ASVAB)?	10.4	1,170,984	439
<u>College</u>			
C1 given any thought to going to college?	72.0	5,614,909	2,441
C2 talked to anyone about going to college?	54.5	4,251,706	1,879
C3 taken any college admissions tests?	22.5	1,750,736	806
C4 submitted a college application?	12.2	949,546	421
<u>Work</u>			
W1 given any thought to getting a full-time civilian job?	49.2	3,171,636	1,335
W2 spoken with anyone about getting a full-time civilian job?	31.4	2,025,483	828
W3 visited any prospective employers or employment agencies?	15.2	983,073	396
W4 applied for a job?	21.7	1,395,216	563

Note. Percentages are weighted data based on the number of  
respondents shown above.

of those who thought about college had gone on to talk with someone about it, and 64% (31.4/49.2) of those who thought about civilian employment went on to talk with someone about it. Similarly, 22% of those who talked about college went on to make a college application, and 69% of those talking about getting a job went on to apply for a job. We do not have a corresponding measure for enlistment (that is, applying for enlistment) since these youth would have been excluded from the PMAS sample. However, the low rates of unaided intention to enlist and the low rate of visiting an Army recruiter (27% of those who had talked about the military) suggest that thinking or talking about enlistment leads to application for enlistment at a lower rate than thinking or talking about work and college converts to applications for work and college.

The comparatively high loss rate for enlistment may also, in part, be due to the lack of time-boundedness on thinking about military enlistment, compared with the six-month frame for college and work, as well as the fact that the enlistment question refers to the military and not the Army specifically. However, the question on talking about joining the Army shares neither of these drawbacks.

The correlations among behaviors relating to enlistment, college and work are shown in Table 106. We previously reported that a very high proportion of those thinking about a job go on to apply for one. This observation is buttressed by the intercorrelations among work-related behaviors. The average correlation between work-related behaviors is .622. Apparently, the progress of movement toward application for a civilian job is composed of a set of tightly linked behaviors.

College-related behaviors are less tightly linked. The average intercorrelation among college-related behaviors is .380. In all likelihood, this lower average linkage reflects the fact that youth have less personal control of the college enrollment process than they do of the job search process. That is, youth may not get good grades, may not be accepted to college, or may not be able to afford college, thus lowering the intercorrelations among college-related behaviors. Nonetheless, the average intercorrelation of .38 suggests a reasonably well-defined career path into college.

In contrast to the college-related behavior, correlations among Army enlistment-related behaviors are relatively modest. The average intercorrelation between enlistment-related behaviors is .232, smaller than either work- or college-related behaviors. To be sure, part of the reason for the low average intercorrelation is the inclusion of the behavior "called a toll-free number or sent for a gift." The low associations between this and other enlistment-related behaviors suggest that sending away for a gift has a different motivational basis than the other enlistment-related behaviors. However, the enlistment-related behaviors still seem to form a less coherent series than the other career choice behaviors.

Table 106

## Intercorrelations Among Career-Oriented Behaviors

	A1	A2	A3	A4	A5	A6	C1	C2	C3	C4	W1	W2	W3	W4
ENLISTMENT: <sup>a</sup>														
A1 - Thought														
A2 - Talked	0.248													
A3 - Recruiter	0.158*	0.684*												
A4 - Gift	0.112*	0.166*	0.145*											
A5 - Visited	0.141*	0.271*	0.360*	0.140*										
A6 - Tested	0.121*	0.233*	0.288*	0.139*	0.281*									
COLLEGE: <sup>b</sup>														
C1 - Thought	0.086	0.124*	0.067	0.043	0.028	0.054								
C2 - Talked	0.063	0.132*	0.055	0.027	0.040	0.035	0.683*							
C3 - Tested	0.007	0.098*	0.062*	0.044	0.069*	0.078*	0.336*	0.412*						
C4 - Applied	0.010	0.065*	0.079*	0.017	0.030	0.059	0.232*	0.302*	0.317*					
WORK: <sup>c</sup>														
W1 - Thought	0.118*	0.049	0.053	0.057	0.016	0.052	-0.164*-0.175*	-0.226*-0.085*						
W2 - Talked	0.136*	0.060	0.047	0.040	0.030	0.028	-0.124*-0.112*	-0.182*-0.037	0.688*					
W3 - Visited	0.118*	0.043	0.056	0.010	0.030	0.004	-0.052	-0.057	-0.113*-0.038*	0.431*	0.627*			
W4 - Applied	0.128*	0.043	0.034	0.049	0.050	0.008	-0.116*-0.122*	-0.163*-0.078*	0.534*	0.777*	0.677*			

Note. Correlations are weighted data based on sample sizes given below. See Table 105 for question wordings.

<sup>a</sup>Minimum Count = 4,079 among enlistment-related behaviors. <sup>b</sup>Minimum Count = 3,230 among college-related behaviors. <sup>c</sup>Minimum Count = 2,790 among work-related behaviors.

\* $p < .05$ .

Other examples illustrate this point more clearly. Youth thinking about college are likely to talk with someone about it ( $r=.683$ ), whereas youth thinking about the military are not as likely to talk with someone about the Army ( $r=.248$ ). This correlation may be artificially depressed in that the questions ask whether the youth had thought about the military and talked about the Army. Youth thinking or talking about college are likely to take a college admissions test ( $r=.232$  and  $.302$  respectively). Youth thinking or talking about the military are less likely to take the ASVAB ( $r=.121$  and  $.233$  respectively). The case is similar for work-related behaviors. Youth thinking about getting a job are very likely to talk about it ( $r=.688$ , compared with  $.248$  for enlistment), and youth thinking or talking about a job are likely to visit a prospective employer ( $r=.534$ ,  $.777$  respectively, compared with  $.141$  and  $.271$  for enlistment).

In summary, then, enlistment-related behaviors seem to provide a less closely-knit progression than college- or work-related behaviors. The closely-linked progression from thought, to speech, to investigation, to commitment present for civilian employment and, to a lesser extent, for college enrollment does not seem to be present for enlistment.

One plausible explanation is that behaviors relating to work and college drive out enlistment-related behaviors. Once a youth gets on the college track, or the employment track, he or she moves away from finding out more about the Army offer. The off-diagonal correlations in Table 106 suggest that this is not a likely explanation. The set of correlations between enlistment-related behaviors and college- and work-related behaviors is, if anything, positive. Youth thinking, talking or taking action with respect to college or work are more likely to be taking actions with respect to enlistment than youth not undertaking college- or work-related activities. There is some evidence of a choice between work- and college-related behaviors in terms of negative associations between work- and college-related activities, but both of these sets are positively associated with enlistment-related activities.

Rather, what seems to be the case is a set of missed connections in the behaviors relating to enlistment. The factor analysis presented in Table 107 makes the nature of this disconnection clearer.

Table 107 contains the results of a principal components factor analysis of a matrix of intercorrelations of the behaviors relating to career choice. Cell entries are the correlations between variables and factors. Eigenvalues are presented in the last row of the table. A listwise deletion procedure was utilized in the factor analysis reported in Table 108. A pairwise deletion procedure was also utilized and the same factor structure emerged.

Table 107

Factor Analysis of Career-Oriented Behaviors Among Primary Male  
Analytic Sample (PMAS)

Behavior	Rotated Factor Matrix <sup>a</sup>		
	Factor1	Factor2	Factor3
W1 Thought about work	<u>.843</u>	.042	-.157
W2 Talked about work	<u>.818</u>	.044	-.077
W3 Visited prospective employers	<u>.753</u>	.053	-.014
W4 Applied for full-time work	<u>.840</u>	.016	-.126
-----			
A1 Thought about Military	.190	<u>.444</u>	.061
A2 Talked about Army	.014	<u>.768</u>	.060
A3 Talked to Army recruiter	.009	<u>.801</u>	.035
A4 Sent for gift/called number	.047	<u>.381</u>	-.018
A5 Visited Army recruiter	-.027	<u>.562</u>	-.010
A6 Took Army aptitude test	-.048	<u>.517</u>	-.021
-----			
C1 Thought about college	-.040	.011	<u>.820</u>
C2 Talked about college	-.055	-.019	<u>.853</u>
C3 Took college entrance exam	-.189	.014	<u>.633</u>
C4 Applied to college	-.030	.040	<u>.517</u>
Eigenvalue	3.05	2.22	1.76

Note. Factor loadings are weighted data based on 2,177 respondents. Reduced sample size results from listwise deletion of cases. See text.

<sup>a</sup>Principal components, varimax rotation.

Table 108

## Intercorrelations of Summary Scales of Career-Oriented Behaviors among Primary Male Analytic Sample (PMAS)

	College	Work	Enlistment
College <sup>b</sup>	<sup>a</sup>		
Number of Respondents	(3,238)		
Work <sup>c</sup>	-.221*	--	
Number of Respondents	(2,196)	(2,792)	
Enlistment <sup>d</sup>	.134*	.104*	--
Number of Respondents	(3,238)	(2,792)	(4,096)
Mean	2.01	1.63	1.25
Standard Deviation	1.57	1.89	1.16

Note. Correlations, means, and standard deviations are weighted data based on number of respondents presented in parentheses.

<sup>a</sup>Top entries in each cell are Pearson's  $r$ 's; bottom entries are numbers of respondents. <sup>b</sup>College Enrollment Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college. <sup>c</sup>Work-Related Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job.

<sup>d</sup>Enlistment-Related Behaviors. Number of behaviors engaged in. Scale ranges from 0-5. Behaviors include thinking about entering the military, speaking with someone about joining the Army, speaking with a recruiter, visiting a recruiting station, taking the ASVAB.

\* $p < .05$ .



As might be expected from our discussion of the correlation matrix, the first extracted factor relates to those behaviors concerned with getting a full-time civilian job. The eigenvalue for this factor is 3.05, representing 21.8% of the variance in the matrix. This factor is clearly specific to the employment context, with uniformly strong factor loadings, ranging between .75 and .85 for the work-related behaviors.

The second factor deals with behaviors relating to enlistment, and the contrast with the first factor is strong. The factor accounts for 15.9% of variance in the matrix, with an eigenvalue of 2.22. There is a wide range of loadings for enlistment-related behaviors, ranging from .38 to .80. As the previous discussion suggested, sending for a gift is not strongly associated with other enlistment-related behaviors (factor loading = .38). Also, thinking about the military is not closely associated with the other behaviors (loading = .44). As previously discussed, the disconnection between thought and action for enlistment decisionmaking does not seem present for work or enrollment. Thus, the factor relating to enlistment decisionmaking gives less evidence of a progressive structure than either the work-related behaviors that preceded it or the college-related behaviors that follow it.

The third extracted factor relates to behaviors with respect to college enrollment. The eigenvalue for the factor is 1.75, explaining 12.5% of the variance and the factor loadings for college-related behaviors are comparatively high, ranging from .52 up to .85.

Since the factor analysis confirms the three theoretically distinct clusters of behaviors, we used it to produce three scales of career-oriented behaviors relating to work, college, and enlistment. These scales include:

- (1) Enlistment-Related Behaviors: Thinking about entering the military, speaking with someone about joining the Army, speaking with an Army recruiter, visiting a recruiting station, taking the ASVAB. (Cronbach's Alpha = .66).
- (2) College-Enrollment Behaviors: Thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college. (Cronbach's Alpha = .38)
- (3) Work-Related Behaviors: Thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job. (Cronbach's Alpha = .62)

These scales were constructed by summing the respective work-, college- and enlistment-related behaviors of youth. The enlistment-related behaviors scale includes thinking about the military but not sending for a gift. We multiplied the work and college scales by 1.25, since each represents only four behaviors, in order to achieve a common range for the three scales (0 through 5). Several alternative

scale construction procedures were investigated. We considered excluding thinking about the military, but this would have destroyed the symmetry to the work and college scales, where thinking about the activity is included as a behavior. We also considered constructing the scales coded as 0 if none of the behaviors was undertaken and 1 if any were. However, this resulted in nearly 75% of youth undertaking enlistment-related behaviors, since so many had thought about the military. In light of the fact that thinking about the military is a low commitment activity (at least in terms of leading to further activity) this proportion seemed artificially high. Finally, we considered simply adding the numbers of behaviors engaged in for each scale, but we felt that the multiplication adjustment to work and college was warranted both to ease comparison among scales, and to correct for the (artificially) different numbers of behaviors queried. Table 108 contains the means of these scales and the correlations between the scales that were produced.

The data in Table 108 suggest, as noted earlier, that enlistment-related behaviors (Mean score = 1.25) are less frequent than either college- or work-related behaviors (Means = 2.01, 1.63 respectively). All three scales have standard deviations nearly equal to their means, suggesting that the distributions are skewed to the right (i.e., a comparatively few respondents undertake many behaviors of each sort).

Job seeking and enrollment activities are negatively associated ( $r = -.221$ ), suggesting either a choice between work and college career orientation or differences between the employment and college markets (i.e., different sorts of youth engage in job-seeking and college-enrollment activities). Enlistment- and college-related behaviors show slight positive association ( $r = .134$ ). Finally, enlistment- and work-related behaviors are weakly associated ( $r = .104$ ). Much of this pattern of relationships is related to the age of the respondent.

In summary, these correlational and factor analyses support the development of three scales of career-oriented behaviors: one relating to getting a job, one for college enrollment, and one for behaviors relating to enlistment. Of these, enlistment-related behaviors are both least common and least closely linked into a pattern of progressive involvement from thought to speech to investigation and commitment. In contrast, work- and college-related behaviors tend to form a comparatively closely linked set of behaviors, each leading to and cumulating with the others.

#### The Market Segments and Career-Oriented Behavior

Table 109 presents means for the three behaviors scales. The table is divided into three panels left to right, displaying means for college enrollment activity, job-seeking activity and enlistment behaviors respectively. The means are displayed for Fall, Winter and Spring Quarters in the first three columns of each panel, with the fourth column in the panel presenting the mean across the three quarters. The first row of the table presents overall means for the PMAS. Subsequent rows present means within education, brigade, age, race and ethnic groups. Table 110 presents the numbers of respondents

Table 109

## Summary Behaviors Scales By Quarter and Market Segment for Primary Male Analytic Sample (PMAS)

Market Segments	College <sup>a</sup>				Work <sup>b</sup>				Enlistment <sup>c</sup>			
	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3
Market - PMAS <sup>d</sup> Total	1.94	2.15	1.94	2.01	1.45	1.66	1.77	1.63	1.28	1.29	1.17	1.25
College Fresh./Soph.	-	-	-	-	1.25	1.38	1.72	1.43	1.27	1.18	1.24	1.23
College-Oriented HS	3.05	3.21	2.87	3.05	1.13	1.14	1.26	1.18	1.51	1.48	1.37	1.45
Work-Oriented HS	0.97	1.02	0.98	0.99	1.87	2.31	2.47	2.22	1.39	1.52	1.27	1.39
High School Graduates Not Currently Enrolled	1.33	1.46	1.19	1.33	2.42	3.42	3.00	2.96	1.10	1.17	0.92	1.07
1st Recruiting Brigade	2.19	2.12	1.98	2.09	1.26	1.58	1.58	1.49	1.28	1.15	1.06	1.16
2nd Recruiting Brigade	1.62	2.00	1.91	1.84	1.28	1.81	1.73	1.61	1.41	1.34	1.31	1.35
4th Recruiting Brigade	1.84	2.13	1.83	1.93	1.58	1.46	1.75	1.59	1.09	1.36	1.05	1.16
5th Recruiting Brigade	2.01	2.18	1.88	2.04	1.45	1.92	2.03	1.81	1.60	1.30	1.37	1.42
6th Recruiting Brigade	2.18	2.34	2.16	2.23	1.61	1.52	1.84	1.65	1.06	1.35	1.15	1.19

(table continues)

Note. Scale means are weighted data based on number of respondents presented in Table 115.

<sup>a</sup>College Enrollment Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college. <sup>b</sup>Work-Related Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job. <sup>c</sup>Enlistment-Related Behaviors. Number of behaviors engaged in. Scale ranges from 0-5. Behaviors include thinking about entering the military, speaking with someone about joining the Army, speaking with a recruiter, visiting a recruiting station, taking the ASVAB. <sup>d</sup>PMAS: Primary Male Analytic Sample.

\*p&lt;.05.

Table 109

Summary Behaviors Scales By Quarter and Market Segment for Primary Male Analytic Sample (PNAS) (continued)

Market Segments	College <sup>a</sup>				Work <sup>b</sup>				Enlistment <sup>c</sup>		
	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3
16-17 Years Old	2.65	2.73	2.45	2.61	1.26	1.32	1.39	1.32	1.47	1.41	1.36
18-19 Years Old	1.99	2.73	2.33	2.36	1.36	1.43	2.06	1.59	1.44	1.51	1.39
20-21 Years Old	1.36	1.32	1.20	1.30	1.98	2.24	2.23	2.16	1.06	1.21	1.01
22-24 Years Old	1.10	1.31	0.97	1.14	2.66	3.30	2.37	2.84	0.97	1.01	0.74
White	1.94	2.14	1.95	2.01	1.44	1.58	1.71	1.57	1.20	1.26	1.12
Black	1.90	2.11	1.82	1.95	1.58	2.26	2.24	2.04	1.61	1.52	1.53
Other	2.15	2.52	2.36	2.33	1.45	0.98	1.22	1.23	1.72	1.31	1.07
Hispanic	1.99	2.35	1.90	2.11	1.51	1.53	1.66	1.57	1.50	1.27	1.17
Non-Hispanic	1.94	2.12	1.95	2.01	1.44	1.68	1.78	1.63	1.26	1.30	1.17

Table 110

## Numbers of Respondents for Summary Behaviors Scales

Market Segments	College <sup>a</sup>				Work <sup>b</sup>				Enlistment <sup>c</sup>			
	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3
Market - PHAS <sup>d</sup> Total	803	1141	1294	3238	710	1019	1063	2792	1037	1445	1614	4096
College Fresh./Soph.	-	-	-	-	167	225	201	593	207	268	296	771
College-Oriented HS	369	563	642	1574	353	550	595	1498	369	563	642	1574
Work-Oriented HS	102	133	184	419	98	128	169	395	102	133	184	419
High School Graduates Not Currently Enrolled	332	445	424	1201	92	116	98	306	359	481	492	1332
1st Recruiting Brigade	156	256	306	718	131	223	248	602	202	336	374	912
2nd Recruiting Brigade	140	225	215	580	118	182	175	475	181	280	271	732
4th Recruiting Brigade	238	336	370	944	212	309	299	820	313	414	469	1196
5th Recruiting Brigade	173	161	221	555	154	152	185	491	212	200	260	672
6th Recruiting Brigade	96	163	182	441	95	153	156	404	129	215	240	584

(table continues)

<sup>a</sup>College Enrollment Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college. <sup>b</sup>Work-Related Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job. <sup>c</sup>Enlistment-Related Behaviors. Number of behaviors engaged in. Scale ranges from 0-5. Behaviors include thinking about entering the military, speaking with someone about joining the Army, speaking with a recruiter, visiting a recruiting station, taking the ASVAB. <sup>d</sup>PHAS: Primary Male Analytic Sample.

Table 110

## Numbers of Respondents for Summary Behaviors Scales

Market Segments	College <sup>a</sup>				Work <sup>b</sup>				Enlistment <sup>c</sup>							
	Q1		Q2		Q3		Q1-Q3		Q1		Q2		Q3		Q1-Q3	
	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3	Q1	Q2	Q3	Q1-Q3
16-17 Years Old	416	575	696	1687	410	568	658	1636	431	583	715	1729				
18-19 Years Old	137	214	266	617	208	292	270	770	278	365	413	1056				
20-21 Years Old	107	150	146	403	60	102	87	249	155	235	234	624				
22-24 Years Old	143	202	186	531	32	57	48	137	173	262	252	687				
White	670	972	1115	2757	597	860	888	2345	880	1241	1389	3510				
Black	96	129	122	343	74	111	119	304	108	150	146	404				
Other				98				107				134				
Hispanic	79	126	166	371	77	115	144	336	106	156	199	461				
Non-Hispanic	722	1011	1118	2851	631	901	911	2443	928	1284	1404	3616				

in each cell of Table 109. To graphically depict the trends in behaviors within segments across quarters, Figures 22, 23 and 24 present the means for each segment by quarter.

In the following sections, we describe the patterns of college-, work- and enlistment-related behaviors. For each, we begin by describing the overall differences between market segments in terms of the behavior of interest. We then describe those trends or cycles that seem consistent with the pattern of differences across quarters. Since we have only three quarters of data, these observations on trends and patterns must be considered speculative. Subsequent data collection and analysis should help to test and clarify these observations.

### College-Related Behaviors

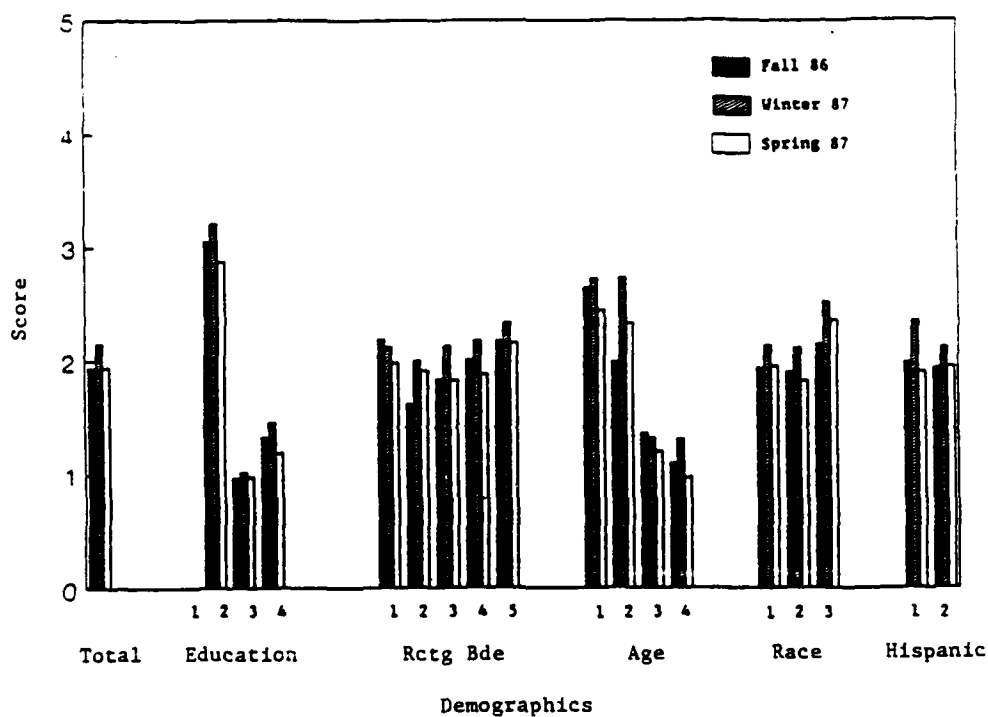
College-oriented high school students are most active in terms of college-related behaviors, both overall and in each quarter. While there are no strong regional differences, youth in the Far West (6th Rctg Bde) and in the Northeast (1st Rctg Bde) are a bit more likely than youth in other regions to be involved in college-related behaviors. College-related activity peaks in the early age groups, especially 16- to 17-year olds. Racial and ethnic differences in college activity are not strong, although ethnic groups classified under Other (i.e., Asians, Pacific Islanders, Native Americans and Alaskan Natives) seem to be more heavily active in college-enrollment activity.

College-related behaviors have a distinct cyclic pattern, building in the Fall (mean=1.94) and peaking in the Winter (mean=2.15), this probably coinciding with college application deadlines, and declining in the Spring (mean=1.94). While the length of the series does not allow definitive assessment, we are confident that the pattern is at least partly reflective of an annual cycle, for two reasons. First, the pattern is consistent with the annual deadlines for college application and admission. Second, the same pattern (peaking in the Winter) is present in all education groups, all racial and ethnic groups, all but one brigade, and all but one age group.

### Job-Seeking Activity

Job-seeking behaviors are highly likely among the work-oriented, but are even more likely among high school graduates not currently enrolled in college. Work-related behaviors are most frequent in the Southeast (2nd Rctg Bde) and the Southwest (5th Rctg Bde). Opposite of college activity, job-seeking activity tends to increase with age, peaking among the 22- to 24-year-olds. Job-seeking behaviors also tend to be more frequent among Blacks.

Job-seeking activity increases continuously from Fall through Spring, evidence either of a long-term trend or an annual cycle lagging a quarter behind college activity. This increasing trend is most apparent for college freshmen and sophomores and for



Key:

**Education**

1. College Freshmen and Sophomores
2. College-Oriented H.S. Students
3. Work-Oriented H.S. Students
4. H.S. Graduates not Currently Enrolled

**Rctg Bde:**

1. 1st (NE)
2. 2nd (SE)
4. 4th (NW)
5. 5th (SW)
6. 6th (W)

**Age:**

1. 16-17 years-old
2. 18-19 years-old
3. 20-21 years-old
4. 22-24 years-old

**Race:**

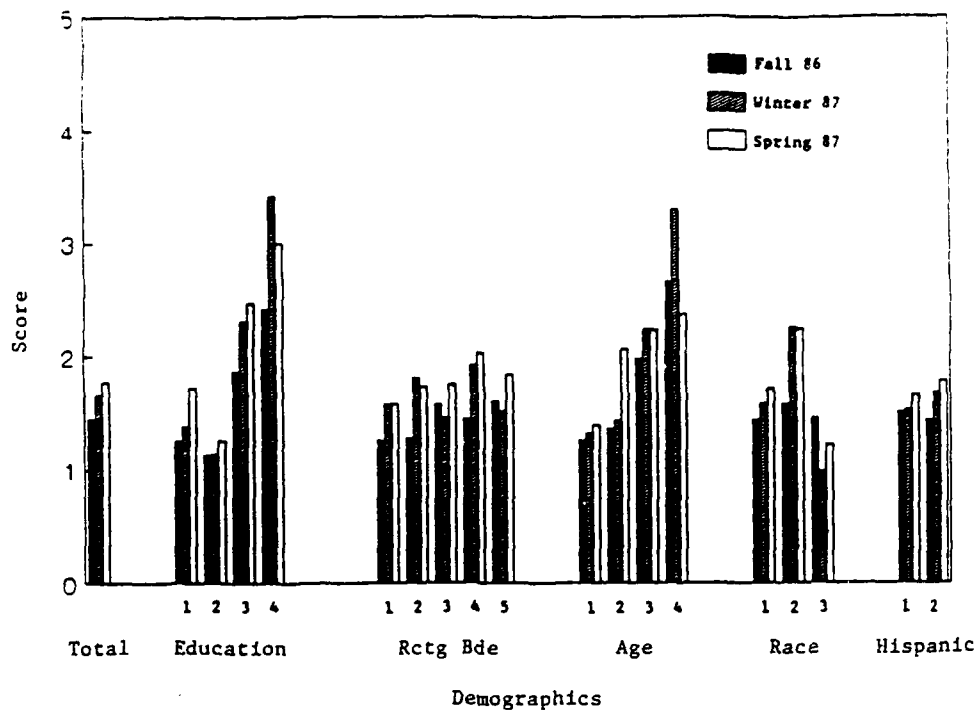
1. White
2. Black
3. Other

**Hispanic:**

1. Yes
2. No

Figure 22. Mean college score by market and quarter.





**Education**

1. College Freshmen and Sophomores
2. College-Oriented H.S. Students
3. Work-Oriented H.S. Students
4. H.S. Graduates not Currently Enrolled

**Rctg Bde:**

1. 1st (NE)
2. 2nd (SE)
4. 4th (MW)
5. 5th (SW)
6. 6th (W)

**Age:**

1. 16-17 years old
2. 18-19 years old
3. 20-21 years old
4. 22-24 years old

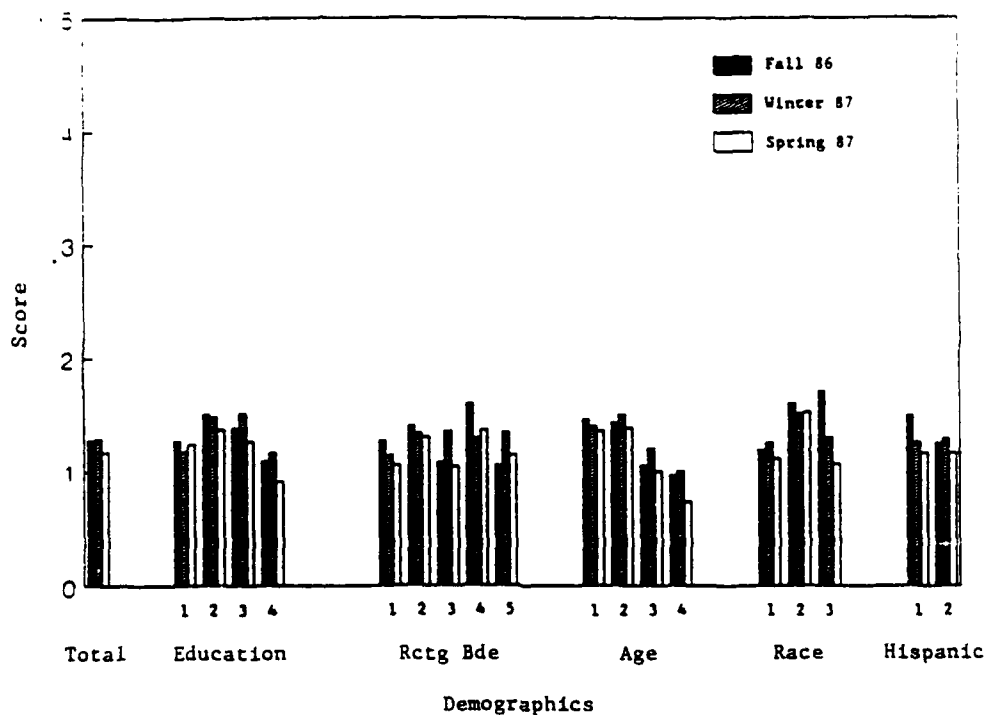
**Race:**

1. White
2. Black
3. Other

**Hispanic:**

1. Yes
2. No

**Figure 23.** Mean work score by market and quarter.



Key:

Education

1. College Freshmen and Sophomores
2. College-Oriented H.S. Students
3. Work-Oriented H.S. Students
4. H.S. Graduates not Currently Enrolled

Rctg Bde:

1. 1st (NE)
2. 2nd (SE)
4. 4th (MW)
5. 5th (SW)
6. 6th (W)

Age:

1. 16-17 years old
2. 18-19 years old
3. 20-21 years old
4. 22-24 years old

Race:

1. White
2. Black
3. Other

Hispanic:

1. Yes
2. No

Figure 24. Mean enlistment score by market and quarter.

work-oriented high school students. The pattern is consistent with an annual cycle (for students at least) in which college students are applying for summer jobs or considering leaving college, and work-oriented high school students are beginning the search for posthigh school employment, cycles that are dependent on the end of the school year. This pattern is also present (though less strongly) for college-oriented high school students. Finally, the finding that nonstudents' employment activities do not peak in Spring is indirectly supportive of the hypothesized school year cycle, since nonstudents should not be affected by the end of the school year.

#### Enlistment-Related Activity

Enlistment-related activity is most frequent in areas of traditional Army recruiting strength, the Southeast (2nd Rctg Bde) and the Southwest (5th Rctg Bde). Enlistment activity is more frequent in the younger age groups, 16- to 19-years of age (similar to the pattern for college enrollment) and among Blacks, other non-Whites, and Hispanics.

In the sample as a whole, enlistment-related activity was constant from Fall to Winter and then declined in the Spring. An inverted-U pattern of enlistment-related activity exists for work-oriented and high school graduates not currently enrolled, building in the Fall, peaking in the Winter, and declining in the Spring. College-oriented high school students show a gradual decline in enlistment-related behaviors through the year.

We cannot say with any certainty if these patterns (however weak) are cyclical annually or if they represent a longer term trend. However, we should note that identifiable trends, which are most likely cyclical (e.g., college activity peaking in the Winter), tend to be cyclic in each market segment. By contrast, enlistment activity seems an amalgam of two cycles--an inverted-U for work-oriented and graduates not enrolled, very similar to the cycle of college behavior for the college-oriented, and an overall pattern of annual decline for college-oriented. It may be that, for some work-oriented high school students, enlistment forms the natural culmination of the senior year in the way college application does for some college-oriented students.

In such traditionally strong recruiting segments as the Southeast (2nd Rctg Bde) and the Southwest (5th Rctg Bde), among 16-to 17-year-olds, Blacks, and Hispanics, enlistment activity is highest in the Fall. One possible explanation could be that, for these groups, enlistment follows a comparatively carefree summer. A second, more troubling possibility may be that the enlistment activity of traditionally strong segments is declining. Further segmentation studies and additional quarters of data will be required to distinguish between these two explanations.

#### Interdependence Between Behaviors and Markets

Enlistment and college activity seem positively associated and college and work activity seem negatively associated (Table 108). It

may be that younger age groups tend to undertake college and enlistment behaviors while older groups tend to be involved in job-seeking activity. There is some evidence to support this statement. The correlation between college- and enlistment-related behavior is .134 (Table 108), but the partial correlation controlling for age drops to .040. Thus, the apparent correlation between college and enlistment behavior is a spurious reflection of the fact that younger respondents tend to do more of both, compared with older respondents. Between two youth of the same age, differences in enlistment activity are unrelated to differences in enrollment activity. Similarly, the negative association between college and work activity ( $r = -.221$ ) weakens somewhat when age is controlled (partial correlation is  $-.181$ ). However, controlling for age, the correlation between job-seeking and enlistment activity is unchanged ( $r = .104$ , partial  $r = .104$ ) suggesting that even among youth of similar age, work behaviors are positively associated with enlistment behaviors.

In summary, college activity is most frequent among younger, college-oriented high school students, especially in the Northeast and Southwest. By contrast, job-seeking activity tends to be greatest among older youth, high school graduates not currently enrolled, and among work-oriented high school students. Enlistment-related behaviors are most frequent in the Southeast and Southwest, among minorities, and among younger high-school students.

There are good reasons to believe that college-enrollment activities follow a school-year cycle, peaking in the Winter. Some evidence suggests, at least for students, that work-related behaviors also follow a school-year driven cycle (lagged a quarter from college admissions). Although enlistment-related activities seem constant between Fall and Winter and decline into Spring, this overall pattern conceals an inverted-U shaped pattern for work-oriented high school students and a declining pattern for college-oriented high school students. The finding that college-oriented high school students are active in enlistment-related behaviors early in the year may provide useful marketing guidance to the recruiting force. The additional finding that enlistment-related activities in traditionally strong recruiting segments (2nd and 5th Rctg Bdes, 16- to 17-year-olds, and minorities) peaked in Fall 1986, may be evidence of either an annual cycle or a longer term trend.

Finally, for any given age group, enlistment activity appears to be independent of enrollment activity. Youth engaging in one activity are neither more nor less likely to engage in the other. There is some evidence that a positive association exists between job-seeking and enlistment behaviors and of a choice between job-seeking and enrollment behaviors independent of age.

#### Relationships Between Career-Oriented Activities and Army Advertising

The top panel of Table 111 presents mean levels of enlistment-, college- and work-oriented behaviors by levels of Army ad recall. The first row shows that recall of Army advertising is indeed related to enlistment activity. Those with no recall of Army advertising have an

average score of .87 on the Army behaviors scale, compared to a mean score of 1.29 among those with unaided recall. We do not interpret this difference as suggesting that advertising exposure leads to enlistment behaviors, in part because of the results in the second and third rows. These data suggest that recall of Army advertising is associated with higher levels of college enrollment activity (1.57 among those with no recall, and 2.07 among those with unaided recall).

It seems unlikely that Army advertising leads youth to enroll in college. Two possible explanations can be offered for the pattern of results. First, it may be that youth who are in a stage of active career search tend to recall career-related messages. Some evidence supports this hypothesis. The correlation between recall of Army advertising (coded 0 for no recall, 1 for aided recall and 2 for unaided recall) and enlistment-related behaviors is .089. When level of college behavior and age are controlled, however, the partial dips to .057. Thus, once the level of activity of the youth (measured by age and college activity) is accounted for, the correlation between ad recall and enlistment activity becomes comparatively weak. Second, it may be that better educated or more intelligent youth are better at recalling advertising and more likely to be active in college or enlistment searches.

The bottom panel of Table 111 does, however, contain some suggestive data focusing on the effects of advertising. This panel presents the proportions of PMAS youth undertaking various enlistment-related behaviors broken out by levels of recall of Army advertising. Youth with unaided recall of Army advertising are more likely to report having thought about joining the military than youth having no recall of Army advertising (71.7% versus 56.1%, a difference of 15.6%). If we interpret this difference as being an effect of advertising, then the "top-of-mind" awareness of advertising may lead at least to giving some thought to the military as an option. However, the size of this difference decreases with the extent of commitment implied by the behavior. Thus, the association between recall and talking with someone (difference of 10.9%), or talking with a recruiter (10.7%) is less than for thinking about joining the military. The effects on visiting a recruiting station or taking the ASVAB are still less (2.9%, 1.6% respectively). Overall, the effects of recall seem most potent on low commitment behaviors and relatively less on high-commitment behaviors.

Table 112 presents the correlations between perceptions of the Army and levels of enlistment-, college- and work-related behaviors. Those with more positive perceptions of the Army's offers are more likely to take actions with respect to enlistment than those with negative or neutral perceptions. Perceptions associated with high levels of enlistment activity are: (a) that the Army offers opportunities to become more mature and responsible; (b) that it offers an

Table 111

## Relationships Between Recall of Army Advertising and Career-Oriented Behaviors Among Primary Male Analytic Sample

	(1) No Recall	(2) Aided Recall	(3) Unaided Recall	(3)-(1)	Z- Scores
<u>Behaviors Scales (Means)</u>					
Enlistment-Related Behaviors <sup>a</sup>	0.87	1.16	1.29	0.42	2.0*
Number of Respondents	(227)	(441)	(3,428)		
College-Related Behaviors <sup>b</sup>	1.57	1.80	2.07	0.50	3.5*
Number of Respondents	(167)	(357)	(2,714)		
Work-Related Behaviors <sup>c</sup>	1.49	1.85	1.61	0.12	--
Number of Respondents	(148)	(295)	(2,349)		
<u>Enlistment-Related Behaviors</u>					
(Percent Engaging In)					$\chi^2(2)$
Thought About the Military	56.1	69.7	71.7	15.6	16.8*
Talked About the Army	14.5	22.5	25.4	10.9	9.7*
Spoke with Army Recruiter	3.6	9.3	14.3	10.7	18.2*
Visited an Army Recruiting Station	4.0	5.1	6.9	2.9	2.9
Took the Armed Services Vocational Aptitude Battery	9.0	9.6	10.6	1.6	.6
Number of Respondents	227	441	3,428		

Note. Means are weighted data based on number of respondents presented in table.

<sup>a</sup>Enlistment-Related Behaviors. Number of behaviors engaged in. Scale ranges from 0-5. Behaviors include thinking about entering the military, speaking with someone about joining the Army, speaking with a recruiter, visiting a recruiting station, taking the ASVAB. <sup>b</sup>College Enrollment Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college. <sup>c</sup>Work-Related Behaviors. Number of behaviors engaged in, multiplied by 1.25, so that scale ranges from 0-5. Behaviors include thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job.

\*  $p < .05$ .

Table 112

Correlations Between Active Army Perceptions and Enlistment-, College- and Work-Related Behaviors and Intentions Among Primary Male Analytic Sample

	Enlistment Behaviors	College Behaviors	Work Behaviors
The Army Offers <sup>a</sup> ....			
1) a wide variety of opportunities to find a job you can enjoy	.165*	-.060*	.076*
2) a physically challenging environment	.131*	.047	.007
3) an experience you can be proud of	.186*	.006	.053*
4) an advantage over going right from high school to college	.144*	-.139*	.082*
5) an opportunity to develop leadership skills	.165*	.010	.017
6) a chance to work with the latest hi-tech equipment	.137*	.007	.083*
7) a great value in your civilian career development	.183*	-.063*	.033
8) an opportunity to develop self-confidence	.158*	-.002	.045
9) an opportunity to develop your potential	.183*	-.017	.052*
10) a mentally challenging experience	.172*	-.052*	.055*
11) an opportunity to become more mature and responsible	.19	.015	.040
12) many opportunities for training in useful skill areas	.140*	-.040	.080*
13) many chances to work with highly trained people	.146*	-.015	.060*
14) an excellent opportunity to obtain money for college or vocational school	.166*	.009	.028
Aided intention to enlist in the Army <sup>b</sup>	.309*	-.029	.041
Aided intention to go to college <sup>b</sup>	.093*	.704*	-.267*
Aided intention to get a civilian job <sup>b</sup>	-.042	-.029	.158*
Number of Respondents	4,096	3,238	2,792

Note. Correlations are weighted data based on number of respondents presented in table.

<sup>a</sup>Scored 1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree. Don't Know and Refused were excluded.

<sup>b</sup>Scored as 0=Definitely Not, 1=Probably Not, 2=Probably, 3=Definitely. Don't Know and Refused were excluded.

\*  $p < .05$ .

experience to be proud of; and (c) that the Army offers benefits to civilian career development. Although these correlations are relatively small (the average correlation is .162), it is unlikely that they are spurious. The correlations between perceptions of the Army and college- and work-related behaviors are very small and in the case of college activity frequently negative. Thus, favorable perceptions of the Army incline respondents toward enlistment behaviors and not toward college or work activity. It is unlikely that "more active" youth are simply more positive toward the Army.

The final rows of Table 112 relate enlistment, college and job-seeking activity to measures of aided intention ("[In the next few years] how likely is it that you will be ... serving in the Army, going to college and working in a civilian job?") Note that this question does not refer necessarily to a full-time job. The next question asked whether the job would be full- or part-time (for those responding positively). However, that question does not, for example, allow us to infer that youth very likely to work part-time are not likely to work full-time. With this in mind, we decided to accept the nonparallel construction of the intentions for work item and accept either full- or part-time. As might be expected, those youth intending to enlist in the Army are likely to be undertaking behaviors preparatory to enlistment ( $r=.309$ ). However, those likely to be going to college are much more likely to undertake enrollment-related behaviors ( $r=.704$ ). The comparatively low correlation between work behaviors and work intentions ( $r=.158$ ) may exist because the intentions question refers both to full-time and part-time employment.

In summary, behaviors relating to enlistment are not associated with advertising in a simple way. There is some evidence that "top-of-mind" awareness contributes to low commitment enlistment behaviors, but has less effect on behaviors reflective of a more serious commitment. Further, the results suggest that enlistment activity is more frequent among those positively inclined toward the Army's offers, and that enlistment-related behaviors are good indicators of intention to enlist. However, as noted earlier, enlistment-related behaviors are loosely coupled compared with college and work behaviors. College behaviors are far more reflective of intention to enroll than enlistment behaviors are of intention to enlist. We discuss the implications of these results for recruiting policy and for the hierarchy of effects model below.

#### Summary and Conclusions

This chapter has reported analyses of self-reported measures of behaviors related to enlistment college enrollment and full-time civilian employment.



Three clusters of behaviors were shown to be internally highly interrelated:

- (1) Enlistment-Related Behaviors: Thinking about entering the military, speaking with someone about joining the Army, speaking with a recruiter, visiting a recruiting station, taking the ASVAB.
- (2) College-Enrollment Behaviors: Thinking about going to college, speaking with someone about going to college, taking a college admissions test, applying to college.
- (3) Work-Related Behaviors: Thinking about getting a full-time civilian job, speaking with someone about getting a job, visiting with prospective employers, applying for a full-time civilian job.

In general, there are comparatively high loss rates (in terms of successful transition from thought, to speech, to investigation, to commitment) for enlistment-related behaviors compared with college- and work-related behaviors, and higher loss rates for college- than work-related behaviors. Loss rates were measured both by differences in proportions from one step to subsequent steps, and by the levels of correlation among steps. Both procedures show higher loss rates for enlistment than for work and college progress. However, the three sets of behaviors were shown through factor analysis and item analysis to yield acceptable scales.

Scales of behaviors undertaken (produced by summing the numbers of behaviors undertaken with respect to enlistment, college enrollment and work) were used in the remainder of the paper. In terms of the scales, work and college behaviors are negatively associated. This implies that youth may make a choice between pursuing either a job or college enrollment. However, enlistment behaviors appear to be basically independent of college activity and they are positively associated with job-seeking behavior (especially when the effect of age is controlled).

College activity was most frequently undertaken by college-oriented high school students, youth in the Northeast (1st Rctg Bde) and the far West (6th Rctg Bde), and among 16- to 19-year-olds. College activity seems to be cyclical, increasing in the Fall, peaking in Winter (prior to college applications), and declining in the Spring. Job-seeking behaviors increased throughout the year (either as a trend or a cycle peaking in the Spring), and were most frequent among the work-oriented and high school graduates not enrolled, youth in the Southeast (2nd Rctg Bde) and Southwest (5th Rctg Bde), Blacks, and the older age groups (especially 22-to 24-year-olds).

Behaviors relating to Army enlistment were constant in Fall and Winter and declined in the Spring. However, this overall trend may mask the existence of a cycle similar to that of college enrollment behaviors for work-oriented high school students and for (to a lesser extent) high school graduates not enrolled. Enlistment behaviors are

most frequent in the sources of traditional recruiting strength--younger age groups, the Southeast (2nd Rctg Bde) and Southwest (5th Rctg Bde), Blacks and Hispanics, but appear to decline in these groups through the year. Whether these declines are cyclic or reflect a longer-term trend will be clearer with the next quarters of data collection.

Behaviors relating to enlistment tend to vary with recall of Army advertising. There is some evidence that low commitment behaviors (e.g., talking with someone about enlistment) are most affected by advertising, while high commitment behaviors are relatively unaffected. Enlistment-related behaviors are also associated with favorable perceptions of the Army's offers. Further, youth who say that they will probably or definitely enlist in the Army in the next few years are more likely to have undertaken enlistment-related behaviors.

The current analysis also provides additional support for the overall hierarchy of effects model. An earlier chapter (Gaertner & Greenlees, Recall of Army Advertising, 1988) showed that recall of Army advertising was associated with favorable perceptions of the Army. The present findings show that although recall is only weakly associated with behaviors relating to enlistment, favorable perceptions of the Army's offers (supported in part by exposure to advertising) are associated with behaviors relating to enlistment, and enlistment-related behaviors are in turn associated with intentions to enlist in the Army. This intentions measure has elsewhere been shown to be associated with actual enlistment (Orvis & Gahant, 1985). Overall, the findings support the existence of an attenuated causal chain linking recall of advertising to perceptions of the Army offer, to behaviors relating to enlistment, to intentions to enlist, to actual enlistment. Obviously, the specification of this causal chain and the estimation of its total effects await further analysis.

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